〈Service Manual〉

Side by Side Refrigerator

MODEL : FRS-T24FA*
FRS-T24DA*

Caution :

In this Manual, some parts can be changed for improving, their performance without notice in the parts list. So, if you need the latest parts information,please refer to PPL(Parts Price List) in Service Information Center (http://svc.dwe.co.kr).

DAEWOO ELECTRONICS Corp.

http : //svc.dwe.co.kr

DAEWOO ELECTRONICS

CONTENTS

SAFETY AND PRECAUTION
1) For starters, be sure to check any chances of the leakage of electricity
2) You could handle a part in the vicinity of electricity after unplugging
3) You should put on rubber glovers to prevent an electric shock on operation test
4) Make sure the rated current, voltage, capacity before using an instrument
5) Keep your wet hands away from the metal goods in the freezer compartment not to be frostbitten
6) Be careful not to let water to permeate the electric part in the machine room

1. EXTERNAL SIZE

■ **FRS-T24DA***
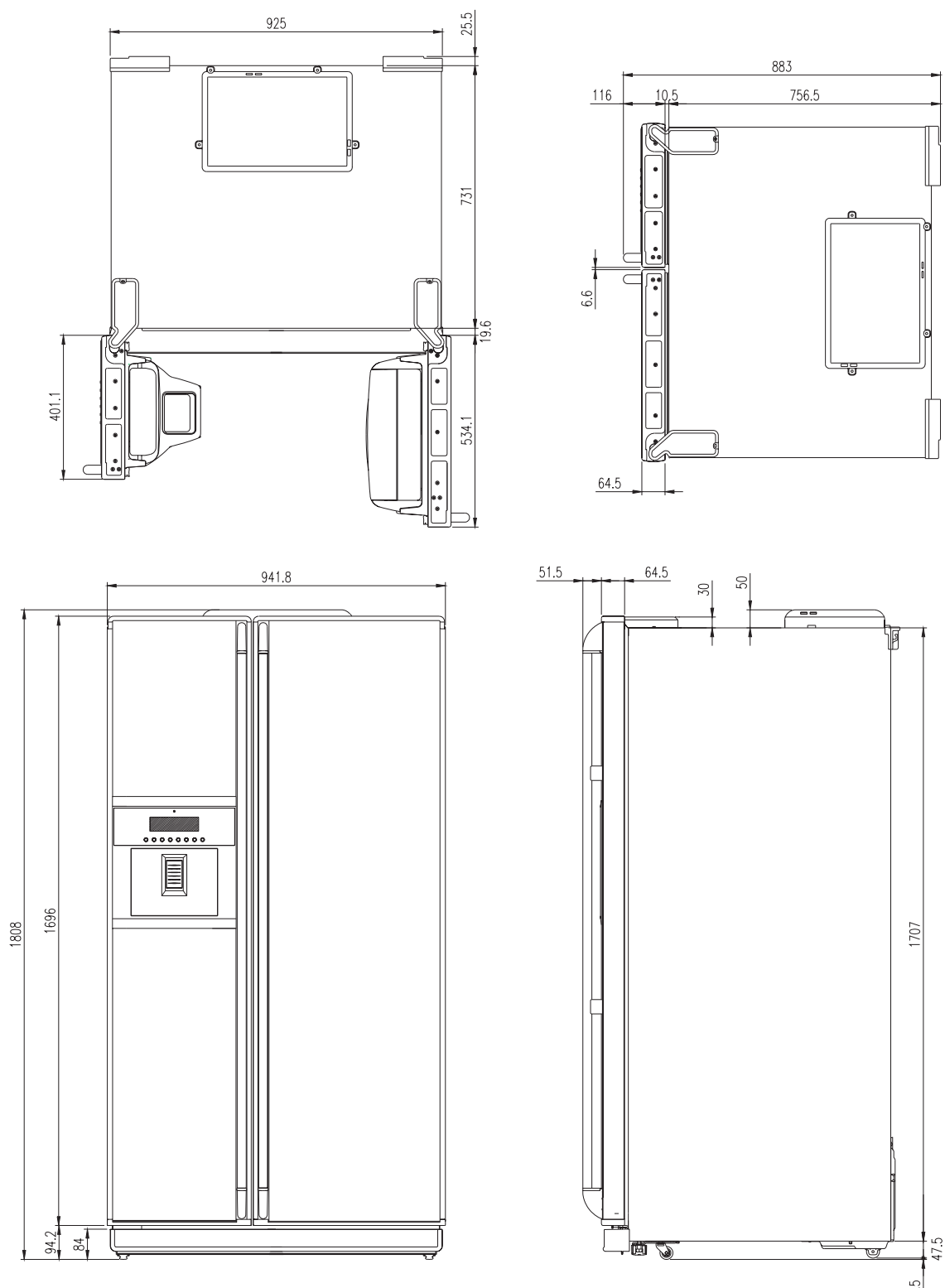
EXTERNAL VIEWS

■ **FRS-T24FA***
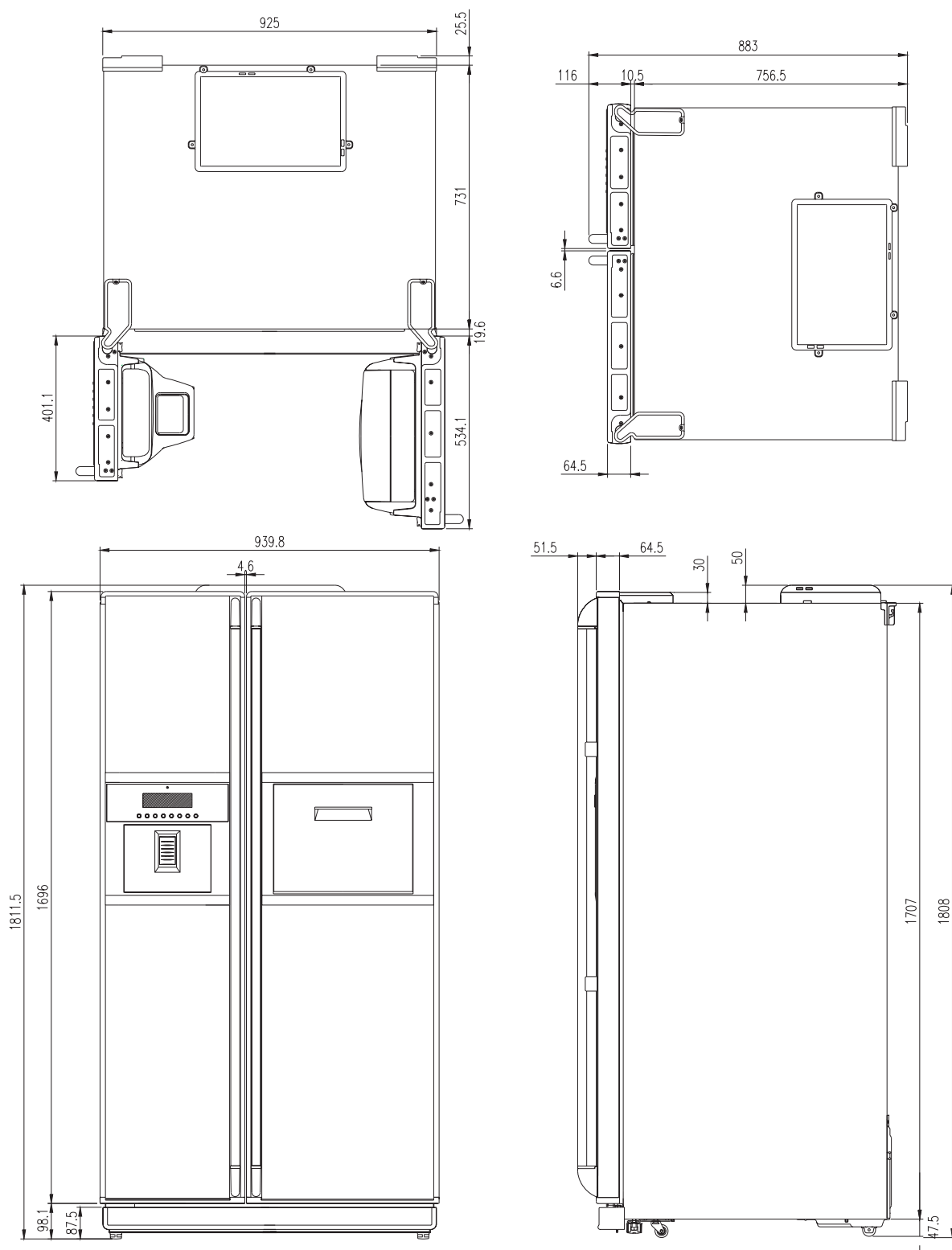
2. Refrigeration Cycle

■ MSZ 70* NF (HB)

HOT PIPE

F

R

ACCUM.

SUC. PIPE

I-PIPE

EVA.

HOT PIPE CONN

WI-CON.

DRYER AS

CAPi-TUBE

COMP

PIPE SUC CONN

PIPE CONN B
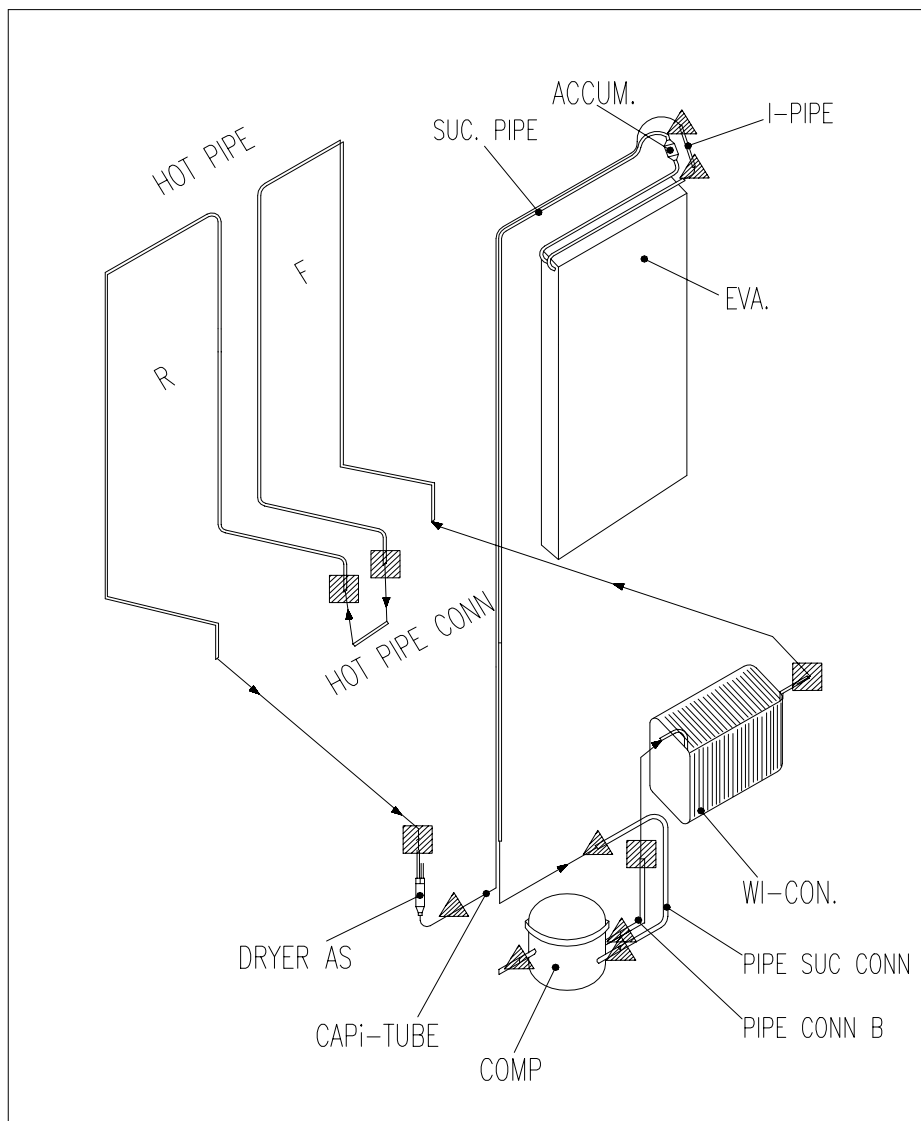
■ Welding Points

●	5%	7 points
■	35%	5 point

■ Flow of Refrigeration Cycle

Compressor → High → Pipe Conn. B → Wire-Con. Pipe → F Hot Pipe → Hot Pipe Conn. → R Hot Pipe → Dryer → Capillary Tube → Low → Evaporator → Accumulator

Pipe Suction Conn. ← Suction Pipe

4
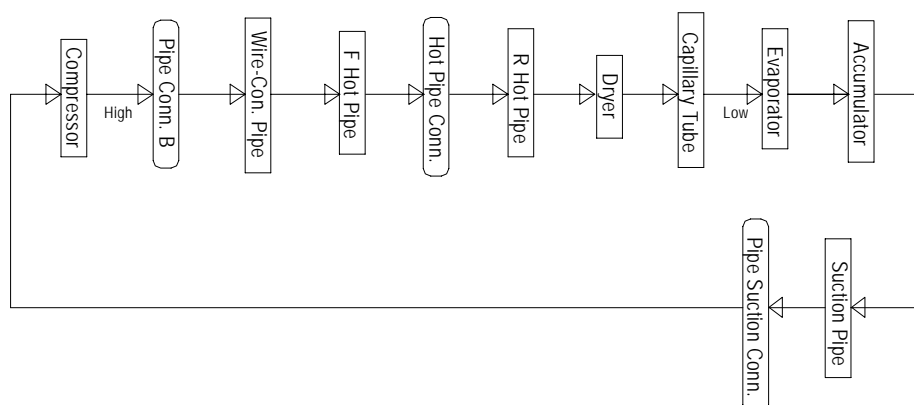
3. Cold Air Circulation
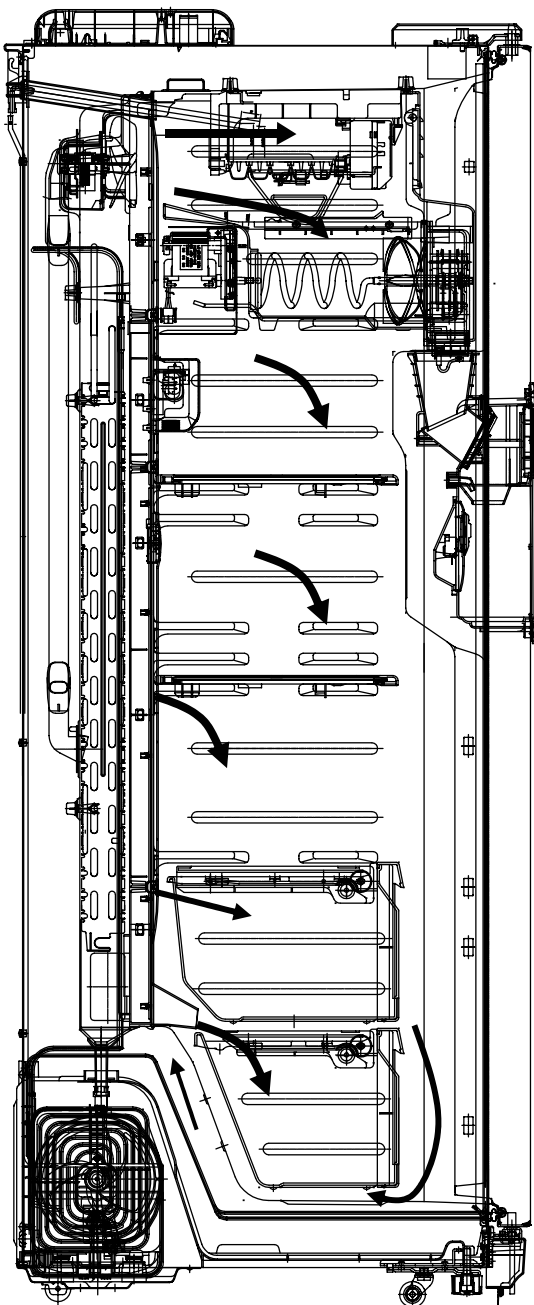
| Freezer Compartment | Refrigerator Compartment |
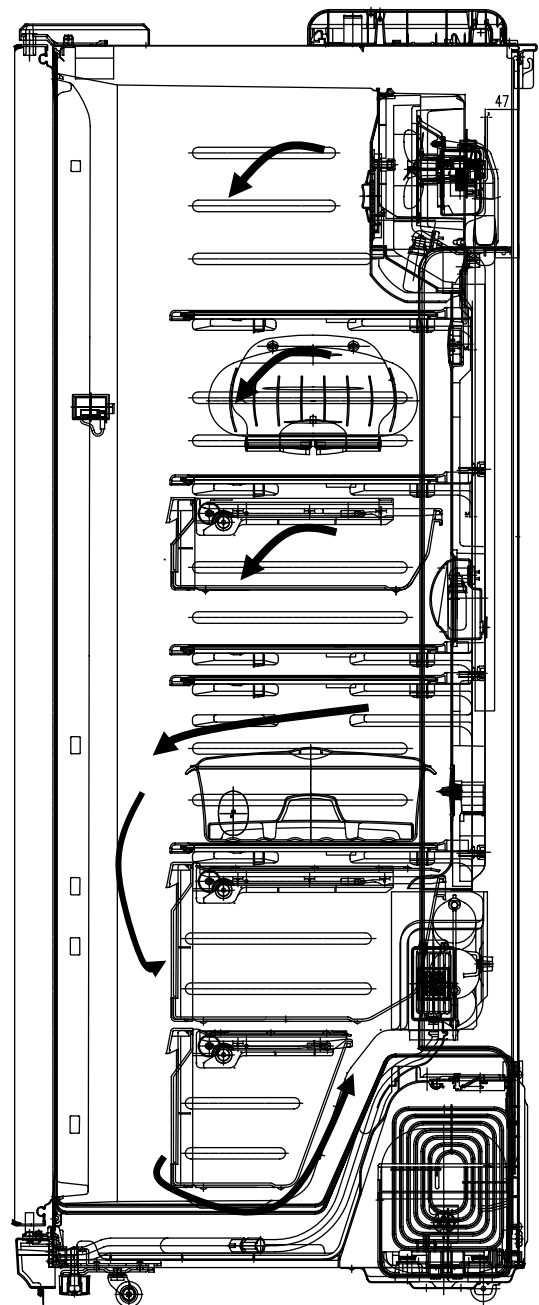
4. NAME OF EACH PART

■ FRS-T24DA*
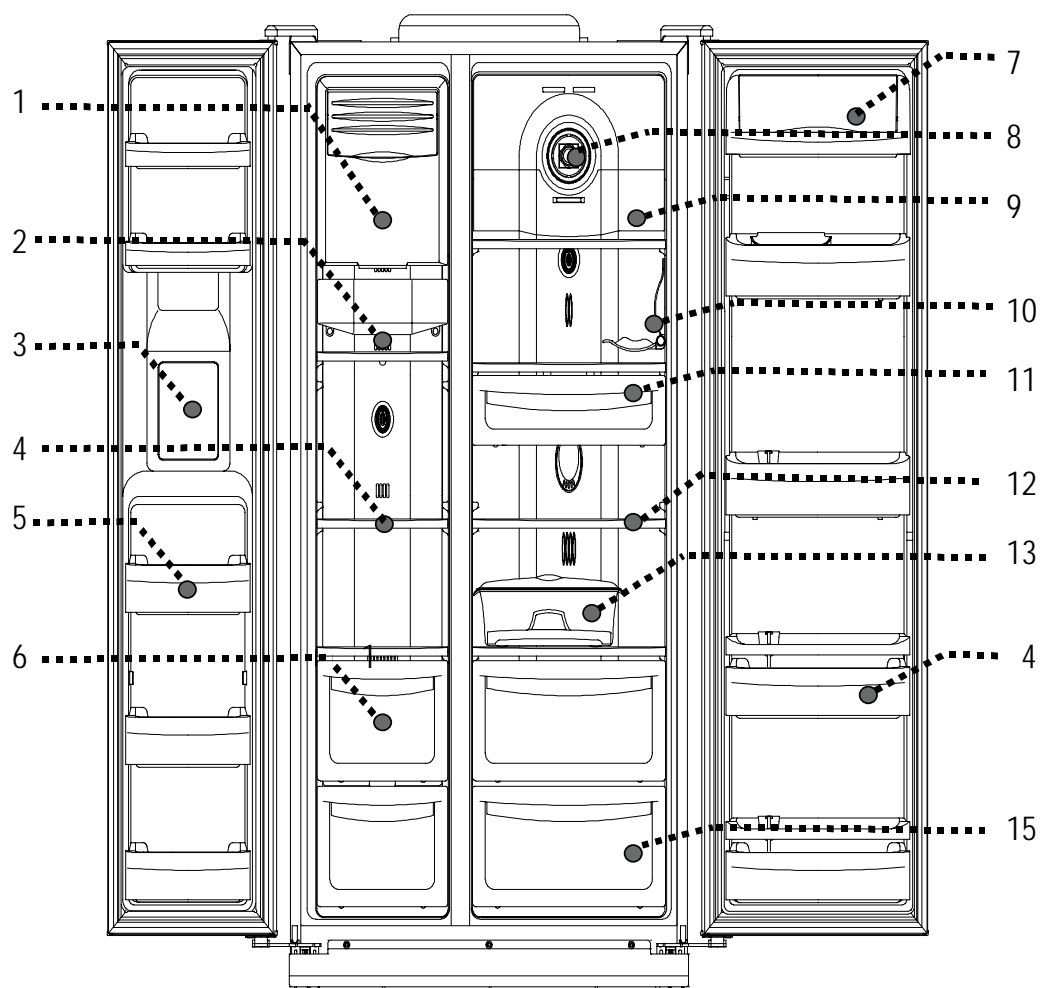
Freezer	Refrigerator Compartment
1. Ice cubes storage case	7. Dairy pocket
2. Freezer light	8. Deordorizer
3. Water/Ice Dispenser	9. Refrigerator light(A)
4. Freezer shelve	10. Wine holder
5. Freezer pocket	11. Chilled case
6. Freezer case	12. Refrigerator shelve
	13. Movable Egg case
	14. Refrigerator pocket
	15. Refrigerator case

■ FRS-T24FA*
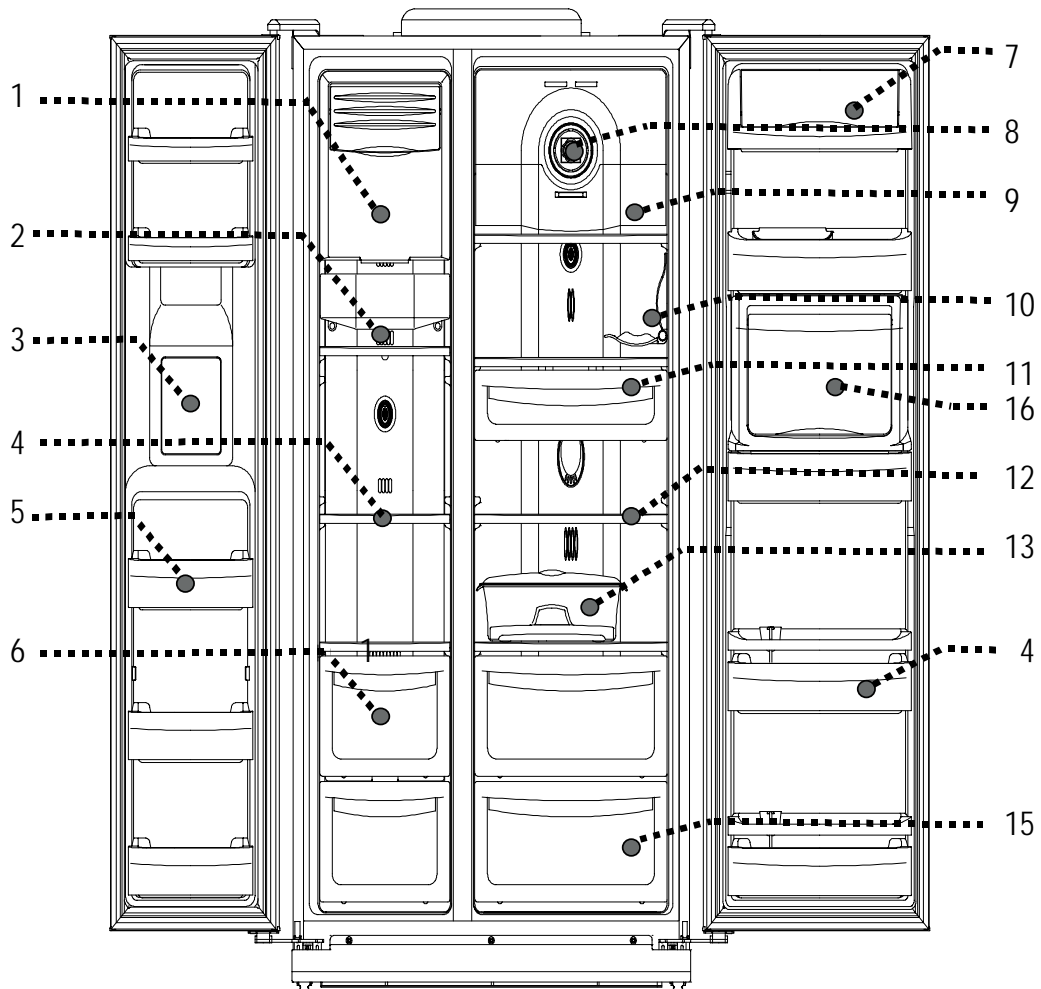
Freezer	Refrigerator Compartment
1. Ice cubes storage case	7. Dairy pocket
2. Freezer light	8. Deordorizer
3. Water/Ice Dispenser	9. Refrigerator light(A)
4. Freezer shelve	10. Wine holder
5. Freezer pocket	11. Chilled case
6. Freezer case	12. Refrigerator shelve
	13. Movable Egg case
	14. Refrigerator pocket
	15. Refrigerator case
	16. Refreshment room(Pocket)

1. SPECIFICATIONS

DIVISION		CONTENTS	
MODEL NAME		FRS-T24DA*	FRS-T24FA*
ISO Gross Volume (L)	FREEZER	231	
	REFRIGERATOR	425	
	TOTAL	656	
ISO Storage Volume (L)	FREEZER	209	
	REFRIGERATOR	394	
	TOTAL	603	
EXTERNAL DIMENSION (mm)	WIDTH	928	
	DEPTH	883	
	HEIGHT	1808	
REFRIGENT	R134a	190	
COOLING & CONTROL SYSTEM	COOLING SYSTEM	Fan Cooling System	
	DEFROST SYSTEM	Fin Evaporator Forced	
	DEFORST CONTROL	Automatic Start & Stop	
NET WEIGHT (kg)		143	145

2. ELECTRIC PARTS

1) COMPRESSOR

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220 / 60	220 ~240/50	230 /50 (EUROP)
COMP MODEL	X	HBL27YG-3	X	HCL27YG-2	HPL27YG-4A	HPL30YG-5	MK183Q-L2U
PART CODE	X	3952127R30	X	3957127R20	3956127R40	395S130R50	3956183D50
STARTING TYPE	X	CSR	X	CSIR	RSCR	RSCR	RSCR

2) RELAY

REFRIGERANT		R134a						
VOLTAGE (V/HZ)		100 /50,60	110 / 60	115,120/60	127/60	220 / 60	220~240 / 50	230 / 50
ASSY	TYPE NAME	X	783SHB	X	801SFB	419RHB	308NHB	265RHB
	PART CODE	X	3018119370	X	3018118180	3018118131	3018119980	3018125210
PTC	RESISTANCE	X	6.8 Ω	X	6.8 Ω	33 Ω	33 Ω	33 Ω
OVER LOAD	PART CODE	X	783SHB	X	801SFB	419RHB	308NHB	265RHB

3) STARTING CAPACITOR

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220 / 60	220~240 / 50	230 / 50
PART CODE	X	3016400100	X	3016400100	X	X	X
RATED VOLTAGE	X	200V	X	200V	X	X	X
RATED CAPACITANCE	X	100 μF	X	100 μF	X	X	X

4) RUNNING CAPACITOR

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220 / 60	220~240 / 50	230 / 50
PART CODE	X	400EL15130	X	X	3016401170	3016401920	3016401170
RATED VOLTAGE	X	230V	X	X	350V	400V	350V
RATED CAPACITANCE	X	10 §	X	X	5 §	5 §	5§

5) F-FAN MOTOR

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
TYPE NAME	BL-2213DWFA-1						
PART CODE	3015911300						
REVOLUTION	DC 12V 2200RPM						

6) R-FAN MOTOR

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
TYPE NAME	BL-2213DWRA-1						
PART CODE	3015911400						
REVOLUTION	DC 12V 2200RPM						

7) C- FAN MOTOR

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
TYPE NAME	BL-2213DWCA-2						
PART CODE	3015911500						
REVOLUTION	DC 12V 2200RPM						

8) DEFROST HEATER

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC (W)	X	140W	←	←	140W	←	←
PART CODE	X	3012811210	←	←	3012811200	←	←

9) DRAIN HEATER

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC (W)	X	110V 10W	←	←	220V 10W	←	←
PART CODE	X	3012811110	←	←	3012811100	←	←

10) LAMP ASSEMBLY

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC (W)	X	120V 15W	←	←	240V 15W	←	←
PART CODE	X	3013600070	←	←	3013600060	←	←
SPEC (W)	X	120V 25W	←	←	230~240V 25W	←	←
PART CODE	X	3013602020	←	←	3013602010	←	←

11) MAIN PCB ASSEMBLY

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
TYPE NAME	X	SBS 2ND PREMIUM	←	←	←	←	←
PART CODE	X	30143D2060	←	←	←	←	30143D2070

12) FUSE (PCB)

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
RATED CURRENT	X	250V/3.15A	←	←	←	←	←
PART CODE	X	5F3GB3282R	←	←	←	←	←

13) THERMOSTAT FUSE

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
OPERATING TEMPERATURE	x	77 ℃	←	←	←	←	←
PART CODE	x	30127201400	←	←	←	←	←

14) MOTOR GEARED AS

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC	x	120V/60Hz	←	←	220V/60Hz	230V/50Hz	←
PART CODE	x	3015914000	←	←	3015912800	3015913900	←

15) VALVE SOLENOID DISPENSER

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC	x	110~115V/60Hz	←	127V/60Hz	220V/60Hz	230V/50Hz	←
PART CODE	x	3015403200	←	3015403100	3015402100	3015403000	←

16) VALVE SOLENOID CRUSHER
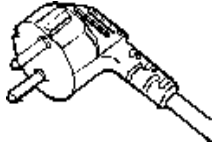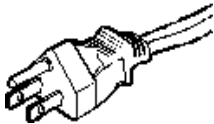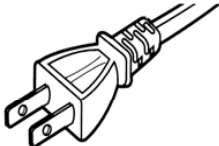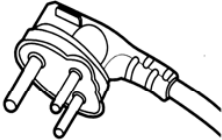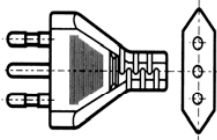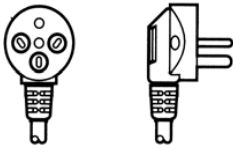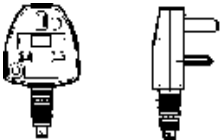
REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC	x	110~127V 60Hz	←	←	220~240V 50,60Hz	←	←
PART CODE	x	3015402900	←	←	3015402000	←	←

17) VALVE WATER

REFRIGERANT	R134a						
VOLTAGE (V/HZ)	100 /50,60	110 / 60	115,120/60	127/60	220/60	220~240 / 50	230 / 50
SPEC	x	110~127V 60Hz	←	←	220~240V 50,60Hz	←	←
PART CODE	x	3015402800	←	←	3015402200	←	←

18) POWER CORD

NO	SHAPE OF POWER CORD	PART CODE	DESCRIPTION	REMARK
1		3011315000	CP-2PIN	For european country
2		401RA17200	CP-2PIN	For other country
3		4006D17101	KP-30	For America & El Salvador
4		401PD17101	KP-211	For Japan & Taiwan
5		3011300801	BP-3PIN	
6		3011303010	# 267	For Chile
7		3011315310		For Israel
8		3011303050	BS-1363A	For U.K, Middle Asia Singapore & Malaysia
9		3011301200	KP-551/550	For China & Australia

Upper power cord's part code is only lead wire, without any kinds of terminal or houisng

3. Door Color Code

1) Assembly Freezer Door

- FRS-T24FA* / FRS-T24DA* (100~120V)

Blowing Agent	Cyclo Pentane				
Color Type	NOBLESS SILVER	NEO WHITE	LUXURY MIRROR	CHERRY WOOD	THE OTHERS
Color Code	NAH4A	NHH4G	LMH4G	CWH4W	THE OTHERS
Part Code	300003974A	300003971A	300003972A	300003973A	300003970A

- FRS-T24FA* / FRS-T24DA* (127V/60Hz)

Blowing Agent	Cyclo Pentane				
Color Type	NOBLESS SILVER	NEO WHITE	LUXURY MIRROR	CHERRY WOOD	THE OTHERS
Color Code	NAH4A	NHH4G	LMH4G	CWH4W	THE OTHERS
Part Code	300003974B	300003971B	300003972B	300003973B	300003970B

- FRS-T24FA* / FRS-T24DA* (220V/60Hz)

Blowing Agent	Cyclo Pentane				
Color Type	NOBLESS SILVER	NEO WHITE	LUXURY MIRROR	CHERRY WOOD	THE OTHERS
Color Code	NAH4A	NHH4G	LMH4G	CWH4W	THE OTHERS
Part Code	3000039740	3000039710	3000039720	3000039730	3000039700

- FRS-T24FA* / FRS-T24DA* (220~240V/50Hz)

Blowing Agent	Cyclo Pentane				
Color Type	NOBLESS SILVER	NEO WHITE	LUXURY MIRROR	CHERRY WOOD	THE OTHERS
Color Code	NAH4A	NHH4G	LMH4G	CWH4W	THE OTHERS
Part Code	300003974C	300003971C	300003972C	300003973C	300003970C

2) Assembly Refrigerator Door

- FRS-T24FA* (100~127V)

Blowing Agent	Cyclo Pentane				
Color Type	NOBLESS SILVER	NEO WHITE	LUXURY MIRROR	CHERRY WOOD	THE OTHERS
Color Code	NAH4A	NHH4G	LMH4G	CWH4W	THE OTHERS
Part Code	300003944A	300003941A	300003942A	300003943A	300003940A

- FRS-T24FA* (200~240V)

Blowing Agent	Cyclo Pentane				
Color Type	NOBLESS SILVER	NEO WHITE	LUXURY MIRROR	CHERRY WOOD	THE OTHERS
Color Code	NAH4A	NHH4G	LMH4G	CWH4W	THE OTHERS
Part Code	3000039440	3000039410	3000039420	3000039430	3000039400

- FRS-T24DA*

Blowing Agent	Cyclo Pentane				
Color Type	NOBLESS SILVER	NEO WHITE	LUXURY MIRROR	CHERRY WOOD	THE OTHERS
Color Code	NAH4A	NHH4G	LMH4G	CWH4W	THE OTHERS
Part Code	3000039540	3000039510	3000039520	3000039530	3000039500

1. DISPLAY

INPUT	Control Object
Front PCB buttons FRZ SET. button REF SET. button SUPER FRZ. button SUPER REF. button WATER / ICE button LOCK Button / SLEEP button	LCD

CONTENTS	
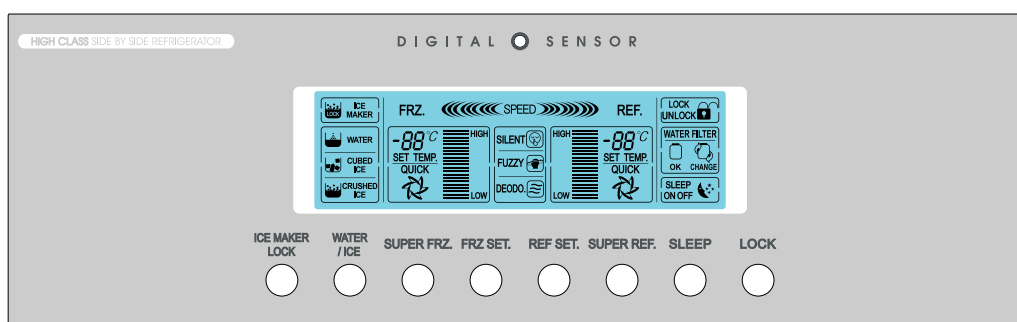
1. Normal Operation
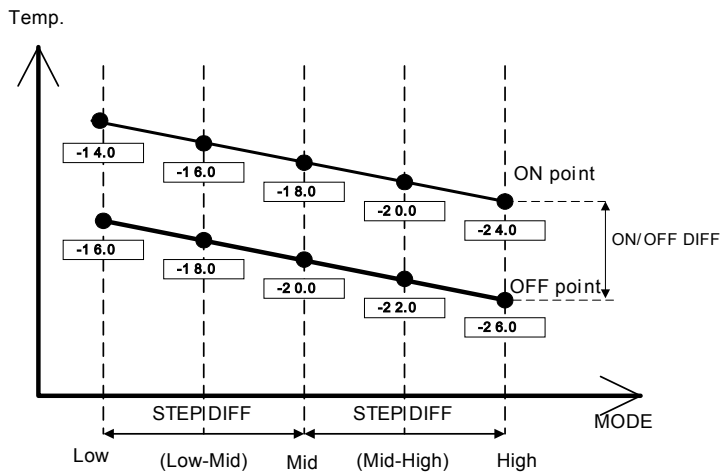   1) Temperature control of Freezer / Refrigerator
      (Initial mode : Freezer & Refrigerator Middle)
   2) Lock mode / Sleep mode / Ice maker Lock : OFF
   3) SPEED icon : inactive
   4) FUZZY & DEODORIZER letters and icons : always ON
   5) Water / Cube Ice / Crushed Ice
      (Initial mode : Water)
   6) Other display modes

CUSTOM LCD	Normal Operation	Silent Mode		Sleep Mode
	Normal Mode	Load Mode	Silence Mode	
Freezer / Refrigerator BAR	DIAL	DIAL	DIAL	DIAL	DIAL
Temp. SEG.	DIAL	DIAL	DIAL	DIAL	DIAL
1) Letters of [FRZ., REF., LOW, HIGH, SET TEMP, FUZZY, DEODO., SILENT, SLEEP, WATER] 2) Icons of [FUZZY, DEODO., SLEEP, Water] 3) Temp. bars and lines	ON	ON	ON	ON	ON
SILENT icon	OFF	OFF	ON	ON	OFF
SPEED letters	OFF	ON	ON	OFF	OFF
SPEED bars	OFF	ON (progressive)	ON (progressive)	OFF	OFF
LOCK ON/OFF, SLEEP ON/OFF	DIAL	DIAL	DIAL	DIAL	DIAL
Water / Cube Ice / Crushed Ice	DIAL	DIAL	DIAL	DIAL	DIAL

CONTENTS	REMARK

2. "FRZ SET." button
      Temperature control of Freezer compartment
      5 steps of sequential temperature mode
      Initial mode by power input : "MID" (Temperature and bars are shown.)
        * Letters are not indicated at Soft-Mid and Mid-Strong modes.
        (Just Setting temperatures and bars are shown.)
 	
      Temperature progress : Low $\longrightarrow$ (Low-Mid) $\longrightarrow$ Mid $\longrightarrow$ (Mid-High) $\longrightarrow$ HIgh
      Temp. indication :   -15°C   -17°C   -19°C   -21°C   -25°C
 	
3. "SUPER FRZ." button
   When this mode is chosen, "QUICK" icon and letters of freezer flicker 6 times and
   ON.   (The set temperature and bars are still the previous value.)
 	
4. "REF. SET" button
      Temperature control of Refrigerator compartment
      5 steps of sequential temperature mode
      Initial mode by power input : "MID" (Temperature and bars are shown.)
        Letters are not indicated at Soft-Mid and Mid-Strong modes.
        (Just temperatures and bars are shown.)
      Temperature progress : Low $\longrightarrow$ (Low-Mid) $\longrightarrow$ Mid $\longrightarrow$ (Mid-High) $\longrightarrow$ HIgh
      Temp. indication :   4°C   3°C   2°C   1°C   0°C
 	
5. "SUPER REF." button
    When this mode is chosen, "QUICK" icon and letters of refrigerator flicker 6 times
    and ON.   (The set temperature and bars are still the previous value.)
 	
6. "SLEEP" button
      Start by pushing the button ("ON" lights.)
      Stop by pushing button again ("OFF" lights.)
      Automaticcally terminated after maximum 12 hours ("OFF" lights.)
 	
7. Water/Ice button
      Select Water mode or Ice mode.
      A rectangle Line around the icon lights up to indicate your selection is on.
      Initial mode by power input: "Water" mode.
      Progress: Water $\longrightarrow$ Cube Ice $\longrightarrow$ Crushed Ice $\longrightarrow$ Water
 	
8. "LOCK" button
      Start by pushing the button ("LOCK" letters and icon light.)
       * No other buttons and modes, buzzer sound are controllable.
      Stop by pushing button again for a second ("OFF" and icon light.)
        * Except "Lock" button, other buttons are inactive during "Sleep" mode.	

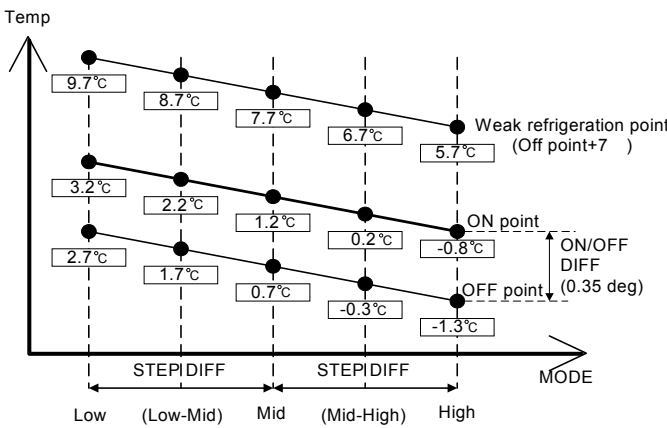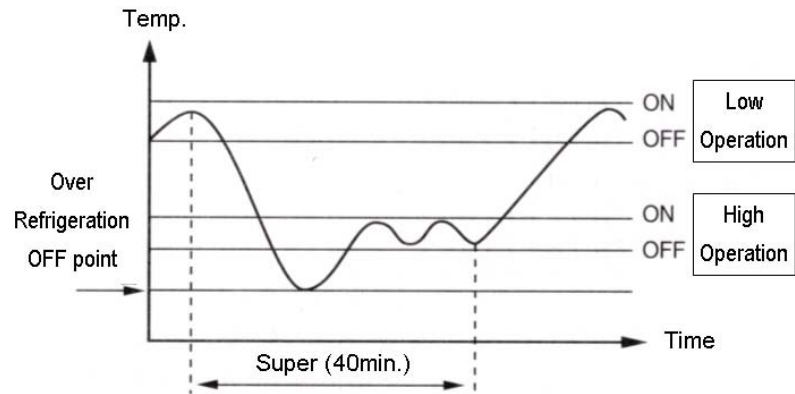| CONTENTS	REMARK
9. "ICE MAKER LOCK" button 　　　Start by pushing "ICE MAKER LOCK"button 　　　　▶"ICE MAKER LOCK" is "ON", 　　　　▶ The Icon & Box of "Cube Ice"/"Crushed Ice"disappear 　　　　▶"Water"Icon & Box is always "ON" 　　　Stop by pushing "ICE MAKER LOCK"button again. 　　　　▶"ICE MAKER LOCK" Icon is "OFF", 　　　　▶The Icon & Box of "Cube Ice"/"Crushed Ice"is "OFF", 　　　　▶"Water"Icon & Box is "ON". 10. Filter information 　　　The normal("OK" Icon) is on for 6 month after first power input. 　　　After six month, "CHANGE" Icon is on. 　　　How to reset Filter information. 　　　▶ Push"LOCK" button and push the "ICE MAKER LOCK " button for 3 seconds.	

2. Temperature Control of Freezer Compartment (FC)

INPUT	Control Object
1. FRZ. SET button 2. SUPER FRZ. button 3. F-sensor	1. COMP 2. F-FAN

CONTENTS	REMARKS

1. Temperature modes change by pushing the button.

Low $\longrightarrow$ Low-Mid $\longrightarrow$ Mid $\longrightarrow$ Mid-High $\longrightarrow$ High

2. Comp. and F-fan are controlled by ON / OFF point of each mode.

3. Freezer Compartment [ON / OFF] DIFF : 2 ℃
   (Freezer middle OFF point : -20.0℃)
   (If RT ≤13℃, F-S OFF point is 2℃ UP.   Freezer Middle OFF point : -18℃)

4. Freezer Compartment [Low $\longrightarrow$ (Low-Mid) $\longrightarrow$ Mid $\longrightarrow$(Mid-High)] DIFF : 2 degrees respectively
   *([(Mid-HIgh) $\longrightarrow$High] DIFF : 4 degrees)

5. Control point of each mode

Temp.

-14.0

-16.0

-18.0

-20.0

-24.0

ON point

ON/OFF DIFF

-16.0

-18.0

-20.0

-22.0

-26.0

OFF point

STEP DIFF   STEP DIFF

MODE

Low   (Low-Mid)   Mid   (Mid-High)   High

17

CONTENTS	REMARKS

6. SUPER FRZ. (Quick Freezing)
   1) Comp. and F-fan are ON (about 150 minutes) regardless of F-sensor.
   2) F-fan runs at 14V for the first 90 min., then at 12V for the rest time.
 	
F/S
 	
F Fan   14V   12V
     90min.   60min.
 	
SUPER FRZ. start F-fan RPM   Normal operation
            change point
	* <u>ON/OFF DIFF. :</u>
	  fixed by MICOM
	
	* <u>STEP DIFF. :</u>
	  fixed by MICOM
	
	* <u>Comp. and C-fan :</u>
	  linked

3. Temperature Control of Refrigerator Compartment (RC)

INPUT	Control Object	
1. REF. SET button 2. R-sensor	1. COMP 2. R-FAN	
CONTENTS	**REMARKS**	

CONTENTS	REMARKS

1. Temperature modes change by pushing the button.
 	
Low ⟶ Low -Mid ⟶ Mid ⟶ Mid-High ⟶ High
 	
2. R-fan are controlled by ON / OFF point of each mode.
 	
3. Refrigerator Compartment [ON / OFF] DIFF : 0.5℃
  (Refreigerator Compartment middle OFF point : 0.7C°)
  (If RT ≤ 13℃, R-S OFF point is 2℃ UP.　Refrigerator Middle OFF
  point : 2.7℃)
 	
4. Refrigerator Compartment [Low →(Low-Mid)→ Mid →(Mid-High)] DIFF
  : 1 degree respectively
 	
5. Prevention of weak/poor-refrigeration
   1) When weak refrigeration is sensed, comp. is ON regardless of F-sensor.
   2) When R-sensor reaches R-fan OFF point, comp. is controlled by F-sensor and
     R-fan turns OFF.
   3) Sensing point of weak refrigeration : R-sensor OFF point of each mode + 7℃
   4) Termination point : Same as R-sensor OFF point of each mode
	* <u>ON/OFF Diff. :</u>
	  fixed by MICOM
	
	* <u>STEP DIFF. :</u>
	  fixed by MICOM

CONTENTS	REMARKS
6. Control point of each mode	

Temp

9.7℃	8.7℃	7.7℃	6.7℃	5.7℃	Weak refrigeration point (Off point+7)	
3.2℃	2.2℃	1.2℃	0.2℃	-0.8℃	ON point	ON/OFF DIFF (0.35 deg)
2.7℃	1.7℃	0.7℃	-0.3℃	-1.3℃	OFF point	

STEP｜DIFF   STEP｜DIFF   MODE

Low   (Low-Mid)   Mid   (Mid-High)   High

7. Super refrigeration proceeds for 40 minutes.
   * Example of temperature change
   (Refrigerator ; Low (normal) -> Super refrigeration)

Temp.

Over Refrigeration OFF point

ON / OFF   Low Operation

ON / OFF   High Operation

Super (40min.)   Time

1) R-fan and comp. are ON until R-sensor reaches to over-refrigeration OFF point (-7℃).
2) After reaching to the point, it goes on with HIGH mode until the end of Super refrigeration.
   It returns to normal after Quick refrigeration of 40 minutes.

4. Sleep Mode

INPUT	Control Object	
1. SLEEP button	1. COMP 2. R-FAN 3. F-FAN 4. CUSTOM-LCD	
CONTENTS		**REMARKS**

1. This mode starts with a push of SLEEP button.

2. Conditions to start Sleep mode
      F-sensor = -13°C
      Unless it is a restart within 40 minutes after the end of previous Sleep mode
      F-sensor error
      Door switch error
      Defrosting (Heater defrosting, pause, Fan delay)
      If the above conditions of ~ are all satisfied, the sleep mode starts.

3. Control of electrical parts
  1) Mode 1
  Once Sleep mode starts, all the electrical parts (COMP, F-FAN, R-FAN) turn OFF. ("ON" letters of SLEEP on LCD is display.)
  2) Mode 2
  It operates in Silent mode and "ON" letters of SLEEP on LCD is displayed on.

4. Termination of Sleep mode
  1) MODE 1
      F-sensor = -9°C
      In case of F-sensor error
      When other button is pushed during this mode
      Total F/R door open time exceeds 30 seconds during the mode
      If Sleep mode is terminated by , and , F/R-fan delay for 5 minutes and restart of this mode is prevented for 40minutes.
      If it exceeds time limit of 130 minute, Mode1 is terminated and Mode2 starts.
  2) MODE 2
   Sleep mode is terminated 12 hours after the first start.
   (Speed mode and defrosting operate in normal way.)

5. After Sleep mode stops all the electrical parts return to normal operation and Sleep icon changes from "ON" to "OFF".

6. If Sleep mode starts during PRECOOL, it goes on again after the Sleep mode is terminated.

7. If Sleep mode starts during Super FRZ., Super REF., it returns to previous set mode after the Sleep mode is terminated.
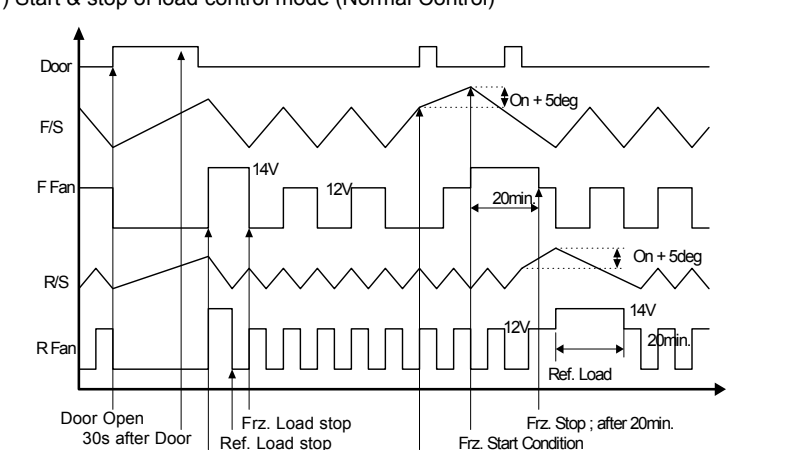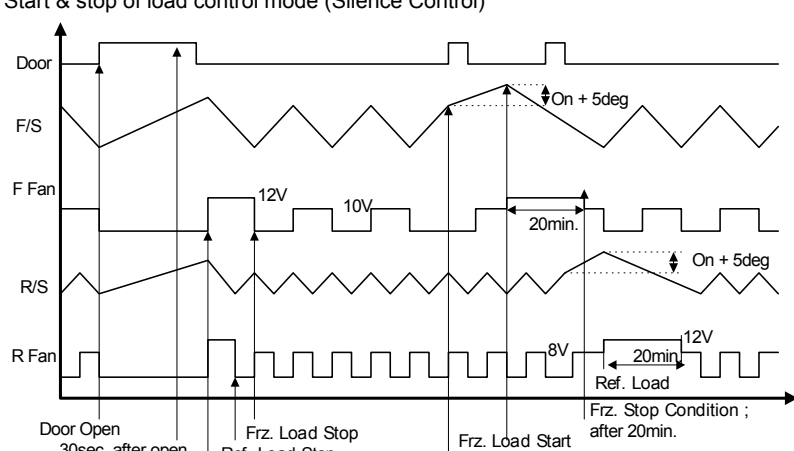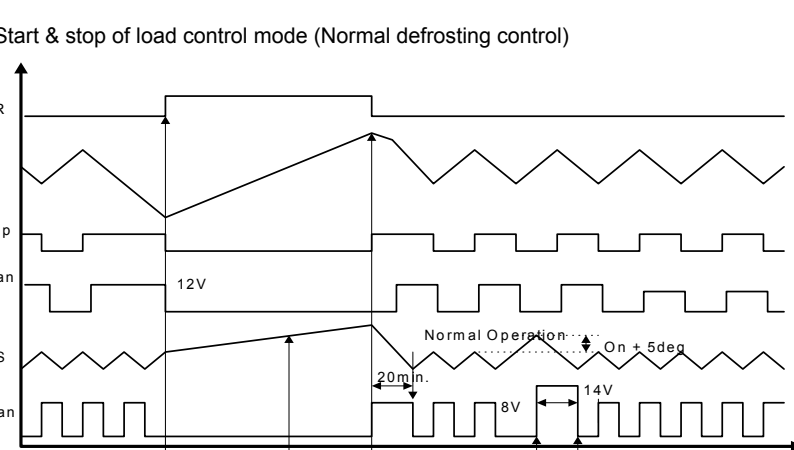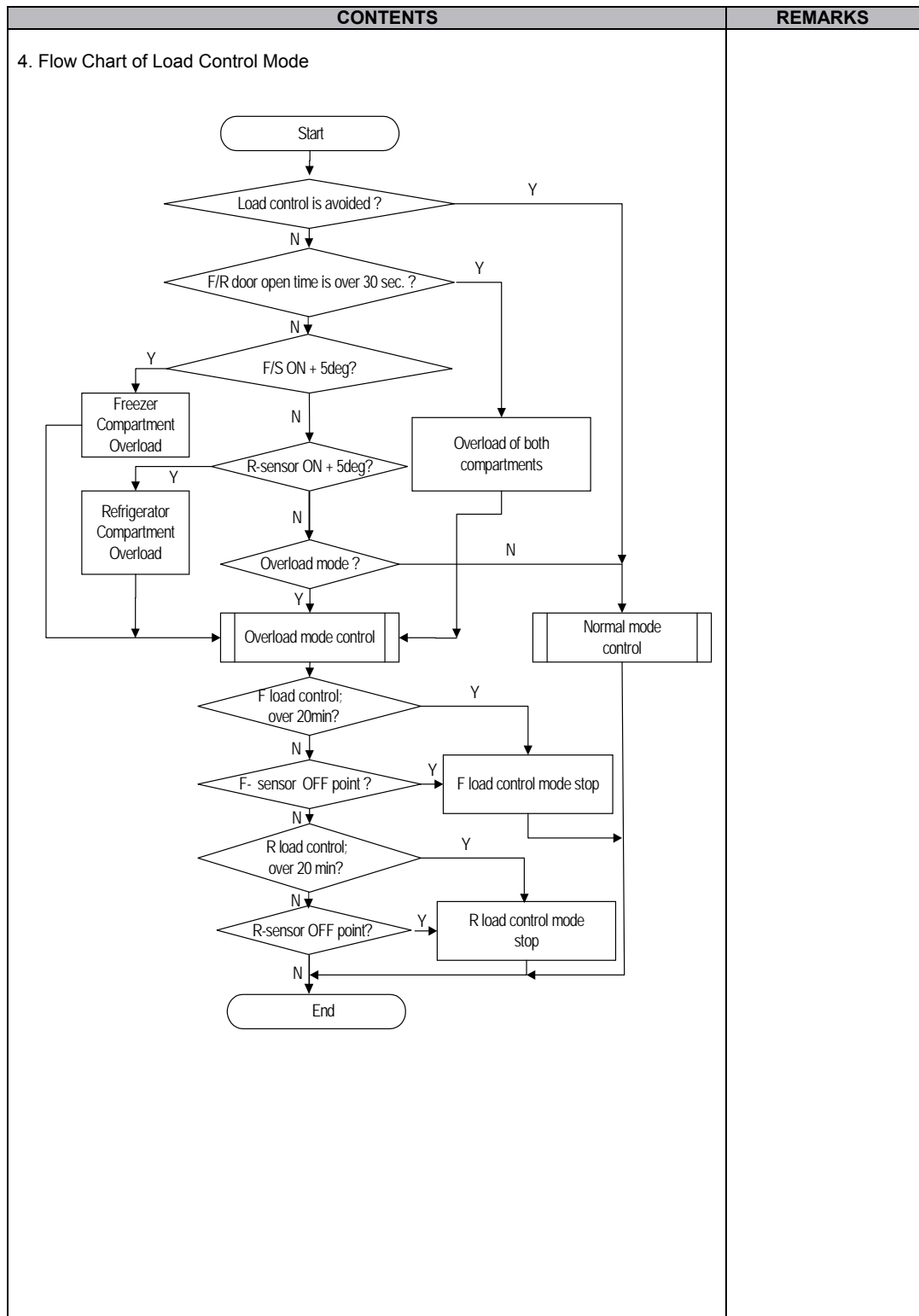
5. SILENT (Silence Mode)

INPUT	Control Object
1. CDS SENSOR	1. COMP 2. R-FAN 3. F-FAN 4. CUSTOM-LCD

CONTENTS	REMARKS

1. Purpose of Silence mode
  To reduce refrigerator noise at night by decresing fan RPM to a minimum degree
 	
2. Condition to start
  The optical or light sensor in top middle of control panel senses surround light and Silence mode starts if the amount of light sensed is below the standard value for more than 1 minute.
  (The mode does not start for initial 240 minutes to prevent down of cooling performance.)
  - Standard value to decide "night" : below 5~7 Lux (optical sensor surface)
  - Standard value to decide "daytime" : above 4~16 Lux
  (optical sensor surface)
 	
3. Control Method	

Control Mode		F-FAN	R-FAN	C-FAN
Silence	Normal	10V	10V	10V
	Load Control	12V	12V	12V

4. Termination Condition The mode stops if lux value is above the standard for more than 1 minute.	

6. Control of Each Mode

INPUT	Control Object
1. CDS SENSOR 2. R SENSOR 3. F SENSOR	1. F-FAN (14V, 12V, 10V)

CONTENTS	REMARKS
Control of Silence mode : operation mode when the optical sensor feels that it is night Normal control : daytime operation mode (Refrigerator noise is relatively low at daytime.) Load control : operation mode when inside temperature goes up due to an increase of load (foods) or frequent door openings.	

CONTENTS	REMARKS

1. Fan voltage of each control mode

Control Mode		F-FAN	R-FAN	C-FAN
Normal		12V	12V	
Load Control	Normal	14V	14V	
	Silence	12V	12V	10V
Silence	Normal	10V	10V	
Sleep Mode2	Normal	10V	10V	
	Load control	12V	12V	

2. Control against (under) load (Load Control)
 1) Purpose : To restore F/R-temperature which has risen by load (much foods in or frequent door openings) as soon as possible

 2) Display : "SPEED" lights until the mode and speed icons flicker.

 3) Conditions to start (from both Normal and Silence)
    F or R door open time exceeds 30 secon sdat a time Freezer and Refrigerator
    load control starts respectively   .
    Over [F-sensor On Point + 5 degree] →F load control
    Over [R-sensor On Point + 5 degree] → R load control

 4) Conditions to avoid load control
    Initial operation (right after power input, Just after Pre-cool, Heater defrosting,
    Pause, Defrosting cycle.)
    (After door opening, the load control enters if the condition complies with.)
    (During Sleep Mode1, load control isn t active.)

 5) Control Method
    5-1) Control mode by F/R-door open time (over 30 seconds)
        F/R-fan works by 14V respectively.
    5-2) Control mode by [F-sensor On Point + 5 degree]
        F-fan works by 14V.
    5-3) Control mode by [R-sensor On Point + 5 degree]
        R-fan works by 14V.
        C-fan works by 10V as normal.

 6) Conditions to stop
    The mode works for 20 minutes.
      (If another condition happens at the end of the mode, it starts again.)
      When it reaches to [F-sensor Off point], F-fan load control mode stops.
      When it reaches to [R-sensor Off point], R-fan load control mode stops.

CONTENTS	REMARKS

3. Control Time Chart of Each Mode
  1) Start & stop of load control mode (Normal Control)
 	
  2) Start & stop of load control mode (Silence Control)
 	
  3) Start & stop of load control mode (Normal defrosting control)	

3. Control Time Chart of Each Mode
  1) Start & stop of load control mode (Normal Control)

Door
F/S
F Fan   14V   12V   20min   On + 5deg
R/S   On + 5deg
R Fan   12V   14V   20min.
Ref. Load

Door Open
30s after Door Open
Load Mode Start
Frz. Load stop
Ref. Load stop
Frz. Overload Input
Frz. Start Condition
Frz. Stop ; after 20min.

  2) Start & stop of load control mode (Silence Control)

Door
F/S
F Fan   12V   10V   20min.   On + 5deg
R/S   On + 5deg
R Fan   8V   20min   12V
Ref. Load

Door Open
30sec. after open
Load Mode Start
Frz. Load Stop
Ref. Load Stop
Frz. Overload Input
Frz. Load Start
Frz. Stop Condition ; after 20min.

  3) Start & stop of load control mode (Normal defrosting control)

HTR
F/S
Comp
F Fan   12V
R/S   Normal Operation   On + 5deg
R Fan   20min.   8V   14V

Defrosting Start
Condition to start Load Mode, but avoided buring defrosting mode
Ref. Load Mode
Ref. Load Stop

CONTENTS	REMARKS
4. Flow Chart of Load Control Mode	

Start

Load control is avoided ?

F/R door open time is over 30 sec. ?

F/S ON + 5deg?

Freezer Compartment Overload

R-sensor ON + 5deg?

Overload of both compartments

Refrigerator Compartment Overload

Overload mode ?

Overload mode control

Normal mode control

F load control; over 20min?

F- sensor OFF point ?

F load control mode stop

R load control; over 20 min?

R-sensor OFF point?

R load control mode stop

End

7. Defrosting Cycle

INPUT	Control Object
1. Total comp. work time 2. Comp. work rate 3. RT temperature 4. Total door open time	1. Defrosting Mode

CONTENTS	Remark

1. Conditions to start defrosting cycle
 	
  1) Total comp. work time : 6, 8, ... 24 hours.
 	
  2) Total door open time : 3 minutes
 	
      (Any door - F or R - open time is over 3 minutes.)
 	
  3) Total time of [comp. ON + comp. OFF]　: 60 hours
 	
  4) Any error mode : R1, F1, D1, F3, RT/S, Door-switch
 	
 2. Conditions to start defrosting mode
 	
  1) The mode starts with the following conditions ;
 	
     ① Any error happens when total comp. work time is 6 or 8....... or 24hours.
 	
     ② Total door open time is over 3 minutes.
 	
      (Any door - F or R - open time is over 3 minutes.)
 	
  2) Defrosting mode starts unconditionally as long as total comp. work time is 24 hours,
 	
     even if the above conditions(①~②) are not satisfied.
 	
  3) Defrosting mode starts immediately as long as total time of [comp. ON + comp. OFF] is
 	
   over 60 hours, even if the above 1) and 2) conditions are not satisfied.	

CONTENTS	REMARKS
3. Flow Chart of Defrosting Start	

```
                    ╭─────────────────────────╮
                    │          Start          │
                    ╰─────────────────────────╯
                                 │
                                 ▼
                         ◇ Comp. work time is over 2 hours ? ◇ ──No──┐
                                 │                                    │
                                Yes                                   │
                                 │                                    │
          ┌──Yes── ◇ Total time is over 60 hours ? ◇                 │
          │                      │                                    │
          │                     No                                    │
          │                      │                                    │
          ├──Yes── ◇ Comp. work time is over 24 hours ? ◇            │
          │                      │                                    │
          │                     No                                    │
          │                      │                                    │
          │              ◇ Comp. work time is over 6 hours ? ◇ ──No──┤
          │                      │                                    │
          │                     Yes                                   │
          │                      │                                    │
          ├──Yes── ◇ Total door open time is over 3 minutes ? ◇      │
          │                      │                                    │
          │                     No                                    │
          │                      │                                    │
          ├──Yes── ◇ Any error ? ◇                                   │
          │                      │                                    │
          │                     No ◄───────────────────────────────┘
          ▼                      ▼
   ┌─────────────┐      ┌─────────────┐
   │ Defrosting  │      │     End     │
   │ mode starts.│      │             │
   └─────────────┘      └─────────────┘
```

8. Defrosting Mode

INPUT	Control Object
1. Defrosting Cycle	1. COMP 2. F-FAN 3. R-FAN 4. HEATER

CONTENTS	REMARKS
1. Defrosting Mode	

1. Defrosting Mode

Pre-Cool
1) Time ; 50 minutes
2) Comp. / F-fan : ON
   R-fan : Control
   Heater : OFF
3) If F-sensor ≤ - 27℃, then PRE-COOL becomes. OFF

Heater Defrosting
1) Comp. /F-fan / R-fan : OFF
   HTR : ON
2) Time limit
   30 seconds : Heater is ON regardless of D-sensor temperature right after defrosting start.
   30 minutes : in case of D1-Error
   80 minutes : in normal control state
3) If D-sensor ≥ 10 ℃ , Heater Defrosting is OFF

Pause
1) Time : 7 minutes
   Comp./ F-fan / R-fan / Heater / Homebar HTR : OFF

Fan Delay
1) Time : 5 minutes
   Comp. : ON
   F/R-fan, Heater : OFF

9. Error Display (LCD Display of Front PCB)

INPUT	Control Object	
1. Temperature Control Buttons	LCD	
CONTENTS		**REMARKS**

1. How to start
   1) Press "crushed ice" button 5 times while pressing "water" button at the same time.
   2) Push "super freeze" button 5 times while pushing "freezer set" button at the same time.

2. Display
   Error code is displayed on LCD.

3. How to stop
   1) Push "reset water filter " button 1 time.
   2) It stops automatically in 4 minutes from the start.

4. All the error Codes are reset if they turn to be normal.

5. Error Code

ERROR CODE	CONTENTS
F1	F-sensor ; disconnection, short.
r1	R-sensor ; disconnection, short.
rt	RT-sensor ; disconnection, short.
d1	D-sensor ; disconnection, short.
dr	R-Door Switch ; defective
dF	F-Door Switch ; defective
dH	Homebar (Refreshment Center) Door Switch ; defective
C1	Cycle ; abnormal or defective.
F3	Return after defrosting ; abnormal or defective
E1	I senser ; defective
EF	F senser ; defective
Et	Horizontal switch ; error
E9	Water supply ; error
ES	Micro switch ; error
EA	Drop the ice while Et
Eu	Full ice switch ; error
Co	Display Full-Down mode
d2	Display forced defrost mode for A/S

CONTENTS	REMARKS
6. Control way of Errors (if any)	

6. Control way of Errors (if any)

1) "F1" ERROR
Cause : F-sensor disconnection / short
Control : Condition of ambient temperature

RT/S	~7°C	~13°C	~19°C	~29°C	over 29°C
Work rate ON/OFF	14/ 50	16 / 41	27 / 45	26 / 22	35 / 20

If F-sensor is normal, the error is terminated automatically.

2) "r1" ERROR
Cause : R-sensor disconnection / short
Control : Condition of ambient temperature

RT/S	~7°C	~13°C	~19°C	~29°C	~39°C	over 39°C
Work rate ON/OFF	OFF	3 / 50	2 / 10	3 / 7	4 / 6	6 / 4

If R-sensor is normal, the error is terminated automatically

3) "rt" ERROR
Cause : RT-sensor disconnection / short (pull-down)
Control : Normal operation, deletion of control condition by RT-sensor
If RT-sensor is normal, the error is terminated automatically.

4) "d1" ERROR
Cause : D-sensor disconnection / short (pull-down)
Control : Time limit (30min.) of defrosting-return
If D-sensor is normal, the error is terminated automatically.

5) Door ERROR("dF","dR","dH" on display)
Cause : in case it senses that door is open for more than 1 hour.
Control : Deletion of function related door switch sensing
If door switch (open & close) is sensed, the error is terminated automatically.

6) "C1" ERROR
Cause : in case comp. works for over 3 hours when D-sensor temp. is over -5°C
Control : Normal operation
When D-sensor temp. is below -5°C in comp. OFF, it is terminated.

7) "F3" ERROR
Cause : in case defrosting-return is done by time limit of 80min.
Control : Deletion of Pre-cool mode in defrosting mode
If defrosting-return is done by D-sensor, it is terminated.

8) "d2" MODE (A/S forced defrosting mode)
Push " fridge set " button 5 times while pushing "freezer set." button simultaneously.
Control : A/S forced defrosting control (Pre-cool is deleted.)
If D-sensor temp. is over 10°C, the mode is terminated automatically.

CONTENTS	REMARKS

9) "EI" ERROR
     Cause : I-SENSOR disconnection / short
     Control : After water suppy, Ice drop every 4.8hour.
     Termination : When I-SENSOR is normal.
 	
10) "EF" Error
     Cause : When Flow-sensor is ERROR(There is no Pulse during some time.)
          The number of pulse signal is below 10 by 1 sec during water supply.
     Control : Control by time (By Vector time recorded EEPROM.)
          (Generally, Water is supplied about 5.5s.)
     Termination : Exchange Flow-Sensor
 	
11) "E9" Error
     Cause : I-Sensor temp(5min after Water supply) doesn't go up.
     Control : Normal control
     Termination : Normal condition
 	
12) "ES" Error (Micro S/W Error)
     Cause : When it senses 1min continuously
     Control : Stop Dispenser & Crusher function.
     Display : Relative LED is flicker.
     Termination : Normal condition
 	
13) Malfunction of Ice Drop Motor
     Cause : Malfunction of Ice Drop Motor.
          [Check the Motor by pushing Test S/W.]
     Termination : Exchange Motor
 	
14) "Eu" Error
     Cause : Switch(which senses if the ice is full or not) is in Error.
     Control : When dropping the Ice, the motor just rotates 90 degree.
     Termination : When the switch is in normal.
 	
15) "EA" Error
     Cause : When sensing Ice dropping by time 3times in level sensor SW Error.
     Control :Stop of Ice Maker.
     Termination : With normal level switch.
             * Reinput of power or push of icemaker test switch.
 	
16) "Et" ERROR
     Cause : Level switch error (No pulse is sensed for some time.)
     Control : By time. (Supply mode is skipped.)
     Te rmination : Normal condition.
 	
   * When all ERROR CODE is normal, the Refrigerator reset.	

10. Forced Defrosting

INPUT	Control Object
1. "FRZ. SET" Button 2. "REF. SET." button 3. "LOCK" button	Defrosting Mode

CONTENTS	REMARKS

1.   How to start
     Set "LOCK ON" first, then push "REF. SET" button 5 times
     while pushing "FRZ. SET" button simultaneously.
 	
2.   How to proceed
  1) Delete Pre-cool mode. (Others are same as normal defrosting.)
  2) Heater is ON regardless of D-sensor temp. at first 30 seconds.
     (Check of defrosting current)	

11. Initial Defrosting

INPUT	Control Object
D-sensor Initial or first power input (power plugin)	Defrosting Mode

CONTENTS	REMARKS
If D-sensor temp. $\leq$ 3.5°C , defrosting mode starts from Pre-cool at first power input.	Comp. is delayed for 6 min. at the initial defrosting.

12. Buzzer or Alarm

INPUT	Control Object
F-PCB buttons Door Switch Initial Power Input	BUZZER

CONTENTS	REMARKS

1.   Buzzer sounds if any button of F-PCB is pushed.
2.   Buzzer sounds 4 times, 3 seconds after initial power input.
3.   Buzzer sounds 3 times in case of A/S forced defrosting, 1 time
     in case of Pull Down operation.
4.   If door is open, buzzer sounds every 1 minute for 5 minutes.
     (Door open alarm)	

13. LCD Background Light

INPUT	Control Object
F-PCB buttons Door Switch Initial Power Input	LCD BACK LIGHT

CONTENTS	REMARKS

1. Conditions to turn on LCD Light
  1) Power input (plugin)
  2) When any button on the panel is pushed, first the back light turns on, then button control is done.
  3) When F/R door is open, the light turns on.
 	
 2. Conditions to turn off the light
   1) The back light turns off 10 seconds after F/R door is closed
   2) 1 minute after button control	

14. Explanation After Delivery

INPUT	Control Object
"FRZ. SET" button "REF. SET" button Power Cord	Electrical components and LCD

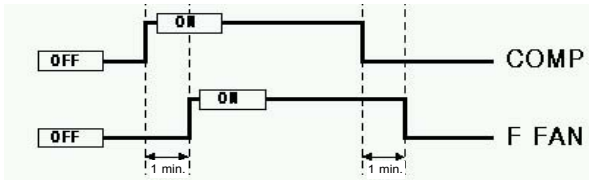| CONTENTS	REMARKS
1. Start Push "REFRIGERATOR SET." button for 3 seconds within 10 seconds just after power input. 2. Control 1) Electrical components are OFF for 3 hours. 2) Display operates in normal way.	
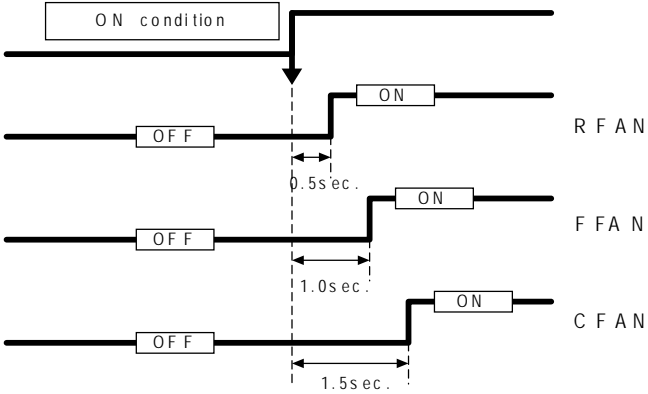
15. Prevention of Compressor Restart

INPUT	Control Object
None	Comp.

CONTENTS	REMARKS
Comp. does not start again for 6 minutes though F-sensor is ON.	6min. delay

16. Back Up Function

INPUT	Control Object
None	

CONTENTS	REMARKS
1. Filter Exchange Information : Record as a realtime from the point of Power Input. 2.P FACTOR (Information about Ice Maker)	

17. Delay Function of Electric Components

INPUT	Control Object
COMP ON/OFF	COMP F-FAN

CONTENTS	REMARKS
1) F-fan delay by comp. ON/OFF F-fan is ON/OFF 1 minute after comp. is ON/OFF. 2) F an Delay and Priority	

18. Home Bar (Home Bar Models Only) Heater

INPUT	Control Object	
None	Comp.	
CONTENTS		REMARKS
It is linked with comp.		
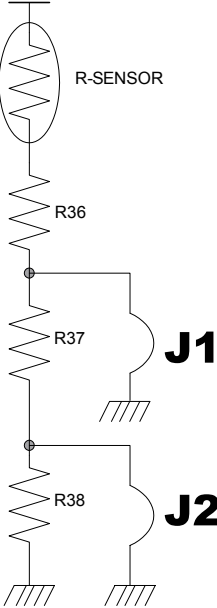
19. Control of Interior Lights

INPUT	Control Object	
Refrigerator Door Freezer Door Home-Bar Door (Home Bar Models Only)	COMP	
CONTENTS		REMARKS

1) Control of Refrigerator Compartment Lights
  R lights turn ON/OFF by R-door switch (ON/OFF).
  10 minutes after sensing door open, the lights turn off automatically though
  door close is not sensed.
 	
2) Control of Freezer Compartment Lights
  F lights turn ON/OFF by F-door switch (ON/OFF).
  10 minutes after sensing door open, the lights turn off automatical yl though
  door close is not sensed.
 	
3) R-lights ON/OFF by Home Bar(Home Bar Models Only) door opening
  R-lights turn ON for 1 minute after sensing HOME-BAR switch open.
  (If the switch is pushed again within 1 minute, the light turns on another
  1 minute.)
 	
4) DISPENSER LAMP CONTROL
  DISPENSER LAMP turns ON/OFF by DISPENSER SW.
  Dispenser Lamp turns ON for 5 seconds after sensing switch close.		

20. Demonstration Function

INPUT	Control Object	
"LOCK" button "REFRIGERATOR SET." button "SLEEP" button	COMP F-FAN R-FAN	
CONTENTS		REMARKS

1. Start
  1) Set "LOCK ON" first.
  2) Push "SLEEP" button 5 times while pushing "REF SET." button simultaneously.
 	
2. Control
  1) All other electrical components are OFF except for F-fan / R-fan.
  2) Fan Control
     DOOR OPEN →FAN ON / DOOR CLOSE → FAN OFF
  3) Display : Normal mode (3sec.) → SPEED(3sec.)→Super mode(3sec.)→
       Silent mode(3sec.)→ Sleep mode (3sec.)
3. Stop or Termination
  1) During Demo mode push "SLEEP" button 5 times while pushing "REF SET."
    button simultaneously.
  2) Power in again.		

21. Regulation of R-sensor OFF Point

INPUT	Control Object	
J1, J2 on Main PCB	Resistance of R-sensor Mid ON/OFF Point	
CONTENTS		**REMARKS**

Regulation of R-sensor   OFF point (1.5degree DOWN)
In case refrigeration of refrigerator is weak or insufficient, take the following action.

R36 : R-SENSOR standard resistance in normal mode (31.4K)
R37 : In case of weak ref., cut J1 to down the standard resistance by 1.5deg(2K)
R38 : In case of weak ref., cut J2 to down the standard resistance by 1.5deg(2K)

R36 = Mid ON/OFF point
R36 + R37 = Mid OFF point - 1.5 deg
R36 + R37 + R38 = Mid OFF point - 3.0 deg

22. Summary of Function

CONTENTS

How to start function modes
All the modes are started with "LOCK ON".

A/S forced defrosting	"FRZ SET." + "REF SET." 5 times.
Pull down Functions	"FRZ SET." + "REF SET." + "SLEEP" 5 times.
Explanation after delivery & installation	"REF SET." for 3 sec. Right after first power in.
ERROR display	"FRZ SET." + "SUPER FRZ." 5 times.
EERROM Clear	"SLEEP" + "LOCK" 5 times.
Reset water filter	"ICE MAKER LOCK" for 3 sec.
DEMO function	"REF SET." + "SLEEP" 5 times.

23. Automatic Ice Maker

Input	Control Object
Full ice sensing switch Ice Maker Lock Sensors	Ice separating motor

CONTENTS	REMARKS
1-1. Flow of ice making	

```
        ┌─────────────────┐
        │      START      │
        └─────────────────┘
                 │
        ┌─────────────────┐
        │   Ice making    │  ► ICE is being made.
        │      Mode       │
        └─────────────────┘
            water supply stand-by
                 │
        ┌─────────────────┐
        │  Ice separating │  ► Ice tray is twisted to separate ice cubes.
        │      Mode       │
        └─────────────────┘
                 │
        ┌─────────────────┐
        │   Water supply  │  ► Water is supplied to ice tray.
        │      Mode       │
        └─────────────────┘
                 │
        ┌─────────────────┐
        │   Water supply  │  ► Check if water is supplied OK.
        │   Check Mode    │
        └─────────────────┘
                 │
        ┌─────────────────┐
        │     RETURN      │
        └─────────────────┘
```

1) Press TEST switch of Icemaker for more than 1 second and test mode starts.
  * Test mode starts from ice separating mode.
  * In case test switch has an error of short, test is done only once.

2) With the initial power input, Ice tray turns to be horizontal and ice making mode starts.

3) Control of water hose heater
  * Heater is always ON if RT-sensor has an error or RT is below 15 degree.
  * Heater is always ON for 60 minutes (max. limit time) if Flow-sensor has an error.

4) Water supply stand-by
  Condition ; if ice is sensed full.
  Operation : proceeds to Ice making mode (Ice separating and water supply modes stop.)
  Termination ; if it is in normal condition.

5) Crusher Function
  It stops operation when freezer door is open.
  It operates if freezer door is closed.

CONTENTS	REMARKS
1-2. Ice Maker MODE	

START

```
                  NO
130 min passed?  ───────►        I-S<-9.5℃  ──NO──►
      │ YES                          │
      │                              │ YES
I-S<-12.5℃  ──NO──►            15 min passed?  ──NO──►
      │ YES                          │ YES
      ▼                              │
ICE Drop mode.  ◄────────────────────┘
```

1) I-S is -12.5℃ and below after 130 min.=> Ice maker complete

2) Although I-S isn't -12.5℃ below for 130 min, I-S maintains -9.5℃ below continuously => Ice maker comlpete

3) I-Sensor Error: Ice Maker Complete after 4.8HR

2. Ice Drop MODE

status
Ice tray

Start ICE DROP

level	8-11 sec	Max 1.1 sec	8.5-12.2 sec	0.2 sec

level normal	c.w	c.c.w	c.w	stop

level	10 sec	11 sec	1.1 sec

1) Each Section's Time used in S/W ERROR Confirm
2) Ice Drop MOTOR Rotation is Sensible by Each Sections
3) S/W ERROR: Ice Drop Every Time
4) Ice Drop MOTOR ERROR: Stop to the Status

CONTENTS	REMARKS

3. Water-Input MODE

```
                    ( START )
                        |
                        v
              +-------------------+
              |   Inlet value ON  |
              +-------------------+
                        |
                        v
              +-------------------------+
              | Water input pulse Count=0 |
              +-------------------------+
                        |
                        v
              < 1 Sec passed after inlet >---N---+
              <      value on?          |        |
                        | Y                      |
                        v                        |
              < Water input pulse >10 >---N---+  |
                        | Y                   |  |
                        |         +-------------------+
                        |         | Flow-Sensor Error mode |
                        |         +-------------------+
            +---------->|                   :
            |           v                   :
            |  < Water input pulse >target pulse >---Y--->:
            |           | N                           :
            |           v                             :
            +--N--< time> target time >               :
                        | Y                           :
                        |<----------------------------:
                        v
              +-------------------+
              |   Inlet value off |
              +-------------------+
                        |
                        v
                    ( STOP )
```

1) Convert of Water-Input Mode After Ice Drop:
   Water-Input Valve Open.
2) Flow Sensor Error: Water-Input is Controlled by Time
3) Veriable Factor Value : Using for A/S Steps
   ①Flow Sensor Normal Operation : Flow Pulse Value sets "238"
      (Water input by Time -: Maximum Water Inut Time => 15 sec.
   ②Flow Sensor error : Water input time => 5.5 sec.

4. Water-Input Confirm MODE
      I-S Temp. Rising Value with RT-S Temp. Mode after 5 min. : Estimate of Water Input

RT-S	7℃	~13℃	~19℃	~29℃	~39℃	39℃
I-S	-10℃	-9℃	-8℃	-7℃	-6℃	-5℃

24. Dispenser Control Function

Input	Control Object	
Dispenser SW Water/Ice Button Lock Ice Maker Button Freezer Door SW	Dispenser Lamp Crusher Motor Flat Solenoid Crusher Solenoid Dispenser Water Valve	
Contents		Remark

1) Water/Ice Selection Button

  * Initial Mode : Water

    Progress : Water $\longrightarrow$ Ice Cube $\longrightarrow$ Crushed Ice $\longrightarrow$ Water

  * Pushing the dispenser value, water/Ice cube/crushed Ice is dispensed as your selection.

2) Lock Ice Maker Button

        Start by pushing "Lock Ice Maker" button
            " Lock Icer Maker" is "ON",
             The Icon & Box of "Cube Ice"/"Crushed Ice" disappear,
             "Water"Icon & Box is always "ON"
        Stop by pushing "Lock Ice Maker" button again.
            "Lock Icer Maker" Icon is "OFF ",
            The Icon & Box of"Cube Ice"/"Crushed Ice"is "OFF ",
            "Water"Icon & Box is "ON".

3) Display

  - Initial Mode : Water ICON & Letter is "ON".
  - A rectangle Line around the icon lights up to indicate your selection is on.
  - The Icon of water, Ice Cube, Crushed Ice is always " ON".(Exception, Dispenser
    S/W Error)
  - When pushing ' Lock Ice Maker':
   Lock Ice Maker is "ON" , The letters of crushed, cube Ice are "OFF"
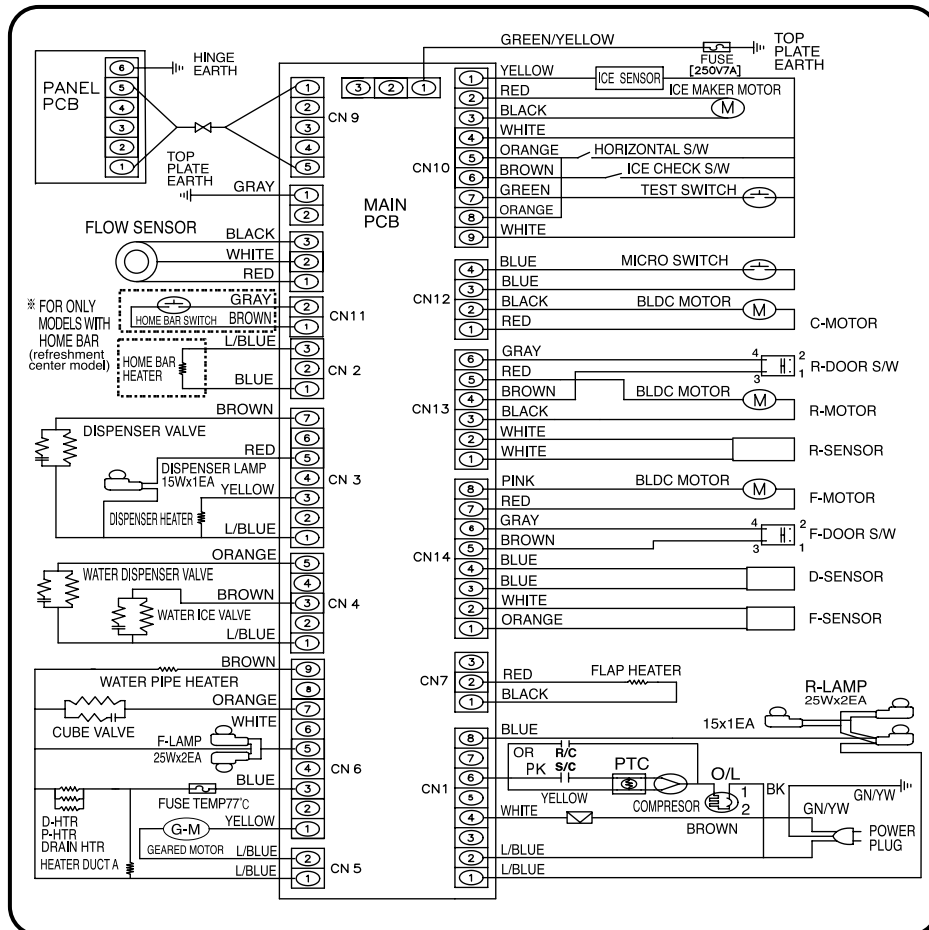 - There is no input during 1 hour, Dispeser transform into Water Mode.

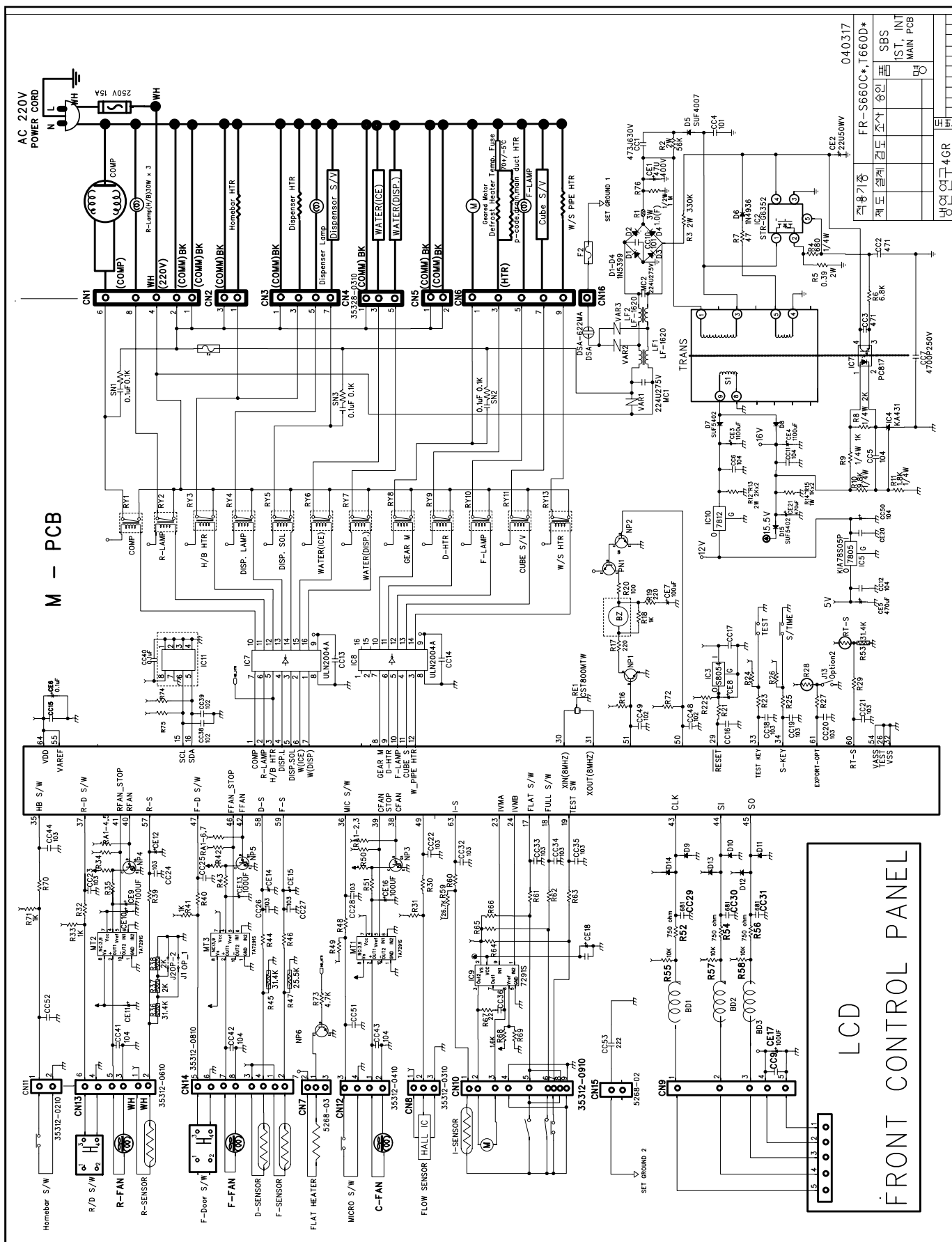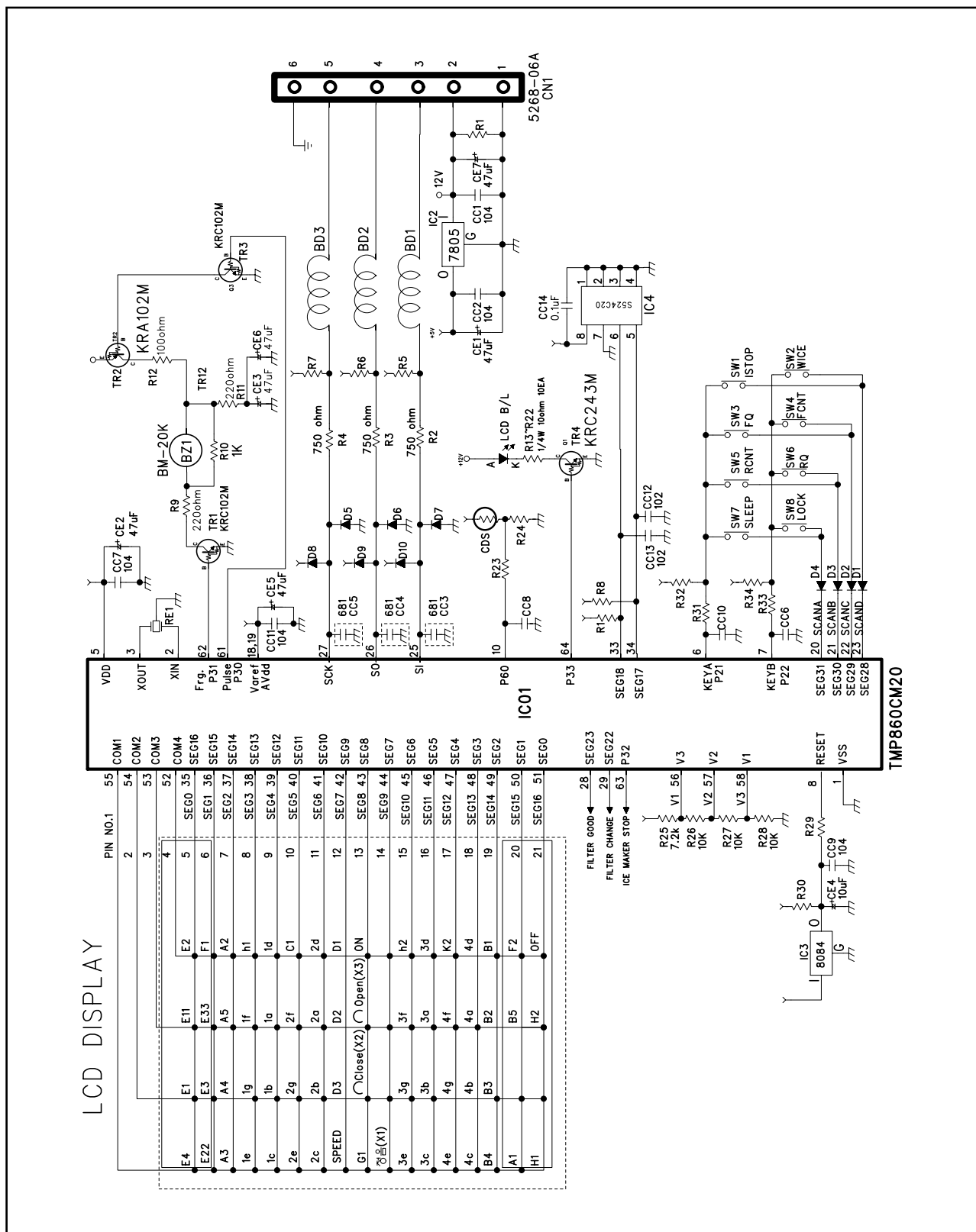| Contents	Remark
3) Control Flow & Timing Chart 3-1) Crushed Ice D.P SW D.P Lamp D.P S/V (Flap) Crusher Motor 3-2) Cubed Ice D.P SW D.P Lamp Cube S/V D.P S/V (Flap) Gear Motor 3-3) Water D.P SW D.P Lamp Water S/V Delay Time : A = 500ms, B = 500Ms, C = 2.0s, D = 5.0s	' D.P ' = Dispenser

1. WIRING DIAGRAM

< RSCR TYPE >
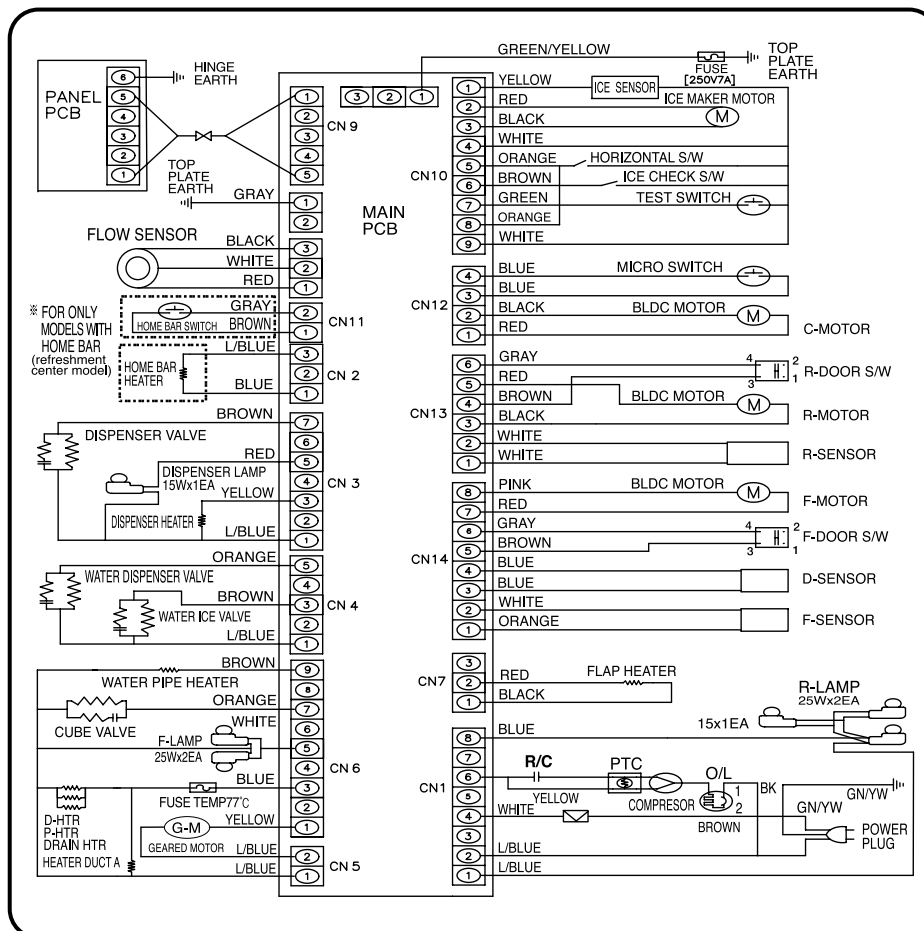
< CSR TYPE >

2. CIRCUIT WIRING DIAGRAM

Main PCB

FRONT PCB DIAGRRAM

1. Installation Preparation

Check if the refrigerator can pass a doorway or enter a door first.

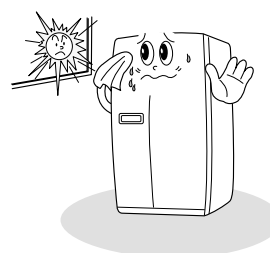| Dimensions(including Door Handles) |
|---|
| (Width*Depth*Height)   942mm × 883mm × 1812mm |
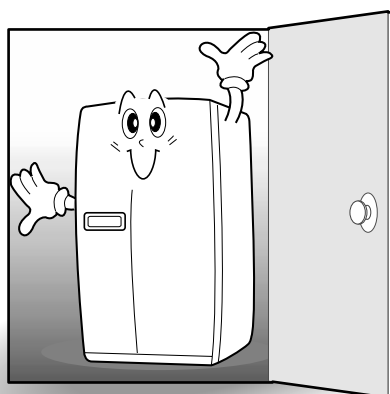
Find a suitable place to install

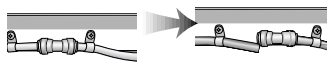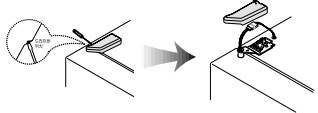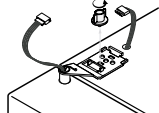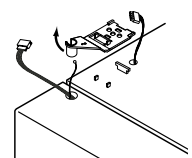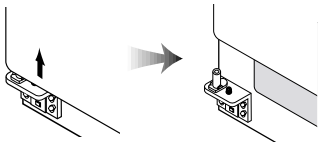| ※Sufficient space from refrigerator back to the wall for free air ventilation	※Avoid direct sunlight.
More than **10cm** More than **10cm** More than **10cm**	
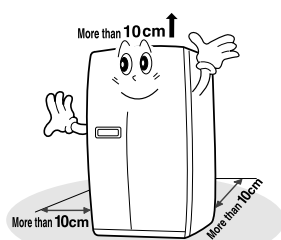
Note
●Once the installation place is ready follow the installation instructions.
If surround temperature of refrigerator is low (below 5 ℃), foods can be frozen or the refrigerator can work in abnormal way.
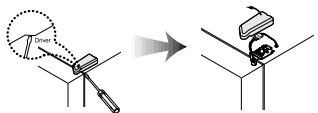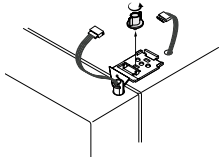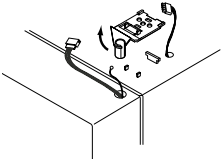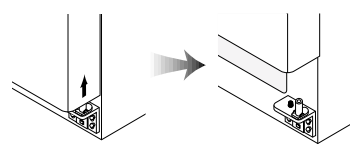
If the refrigerator can not enter the door, follow these steps.

● Removing Freezer Door

※Remove front bottom cover first, if it is attached.

1 Remove the bottom cover first.
Pull out the left collar of the coupling first, then hold the coupling and pull out the left water tube.

2 Unscrew top hinge cover with a screw driver.
Insert a thin screw driver into the side groove of the cover to remove.

3 Turn top hinge fastener counterclockwise 3~4 times.
Disconnect the harness wires.

4 Lift up the front of hinge to remove.
(After the hinge is removed the door can fall down forward. Be careful !)

5 Be careful not to damage the water line when removing the door.

● Removing Refrigerator Door

1 Unscrew top hinge cover with a screw driver.
Insert a thin screw driver into the side groove of the cover to remove.

2 Turn top hinge fastener counterclockwise 3~4 times.
Disconnect harness wires.

3 Lift up the front of hinge to remove.
(After the hinge is removed the door can fall down forward. Be careful !)

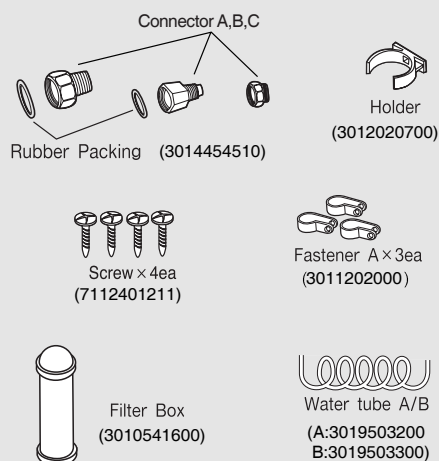**4** Lift the door straight up to remove.

2. How to install water line

How to install Water Line

1. The water pressure should be 3kgf/cm² or more to run the automatic icemaker.
   ※Checkup your tap water pressure ; if a cup of 180cc is full within 10 seconds, the pressure is OK.

2. When installing the water tubes, ensure they are not colse to any hot surfaces.

3. The water filter only "filters"water ; it does not eliminate any bacteria or microbes.

4. If the water pressure is not so high to run the icemaker, call the local plumber to get an additional water pressure pump.

5. The filter life depends on the amount of use. We recommend you replace the filter at least once every 6months.
   ※When attaching the filter, place it for easy access (removing & replacing)

6. After installation of refrigerator and water line system, select [WATER] on your control panel and press it for 2~3 minutes to supply water into the water tank and dispense water.

7. Use sealing tape to every connection of pipes/tubes to ensure there is no water leak.

8. The water tube should be connected to the cold water line.

◀ WATER SUPPLY KIT

※ Check the parts below for installing water supply. Some other necessary parts are available at your local service agents.

Connector A,B,C

Rubber Packing (3014454510)

Holder (3012020700)

Screw × 4ea (7112401211)

Fastener A × 3ea (3011202000)

Filter Box (3010541600)

Water tube A/B (A:3019503200 B:3019503300)

Installation Procedure

1. Join Connector to the tap water line

1) First lock the main tap water valve.
   Check if connector B and C has its own rubber packing ring in it.

2) Join Connector-C to the water tap, then Connector -B to connector -C with a wrench or spanner.

3) Insert water pipe into Connector-B and join Connector-A with a wrench or spanner.

4) In case Connector-C does not fit water tap join Connector-B directly to the tap.(See Figure B.)
   ※If no connector fits water tap, call your local service.

5) Unlock main tap water valve, open tap water and check if any water leaks on each joins.

Achtung
Place the rubber washer inside the tap connector and screw onto the water tap.

<Figure A>

Tap
Connector C
Connector A
Connector B
Water Tube
Rubber Packing

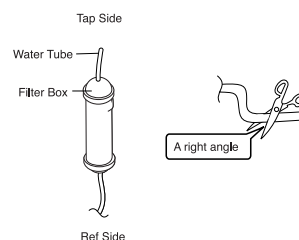<Figure B>

Tap
Connector A
Connector B
Rubber Packing
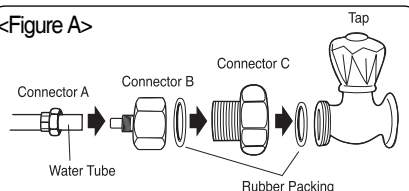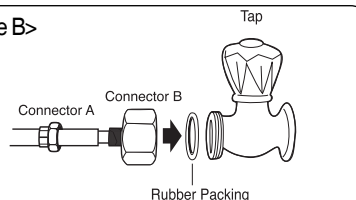
2. Get ready to install the Water Filter

1) Measure an approximate distance between the filter and the Water Tube and cut the tube off filter vertically.

2) Connect the tubes to the filter as the figure shows.

Achtung
Leave a sufficient distance when cutting the tubes.

Tap Side
Water Tube
Filter Box
A right angle
Ref Side

3. Remove any substances in the filter.

1) Open the main tap water valve and check if water comes out of the Water Tube.

2) Check if the Water Valve is open in case water does not come out.

3) Leave the valve open until clean water is coming out.

※ Initial water may contain some substances out of filter (manufacturing process).
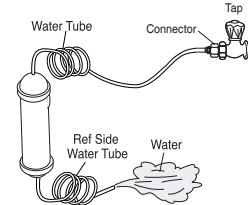
4. Attach the Filter Box

1) Screw and fasten the filter holder to the left/right side of the back of refrigerator.
   ※ In case the holder is not fastened well, remove the back paper of the tape on the filter holder and attach it."

2) Insert the filter box into the holder.
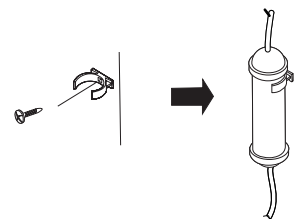
5. Connect the Water Tube to the refrigerator.

1) Remove the rear cover at the bottom back of the refrigerator.

2) Insert the fastening ring into the Water tube.
   (Be careful to follow the direction of the nut.)

3) Insert the Water Tube into the top of Water Valve, turn the nut clockwise to fasten it. (The Water valve is to the right of the motors.)

4) Check for any bent tubes or water leaks; if so, re-ckeck instalation procedure.

5) Replace the rear cover. (The Water Tube should be placed between the groove of the refrigerator back and motor cover.)
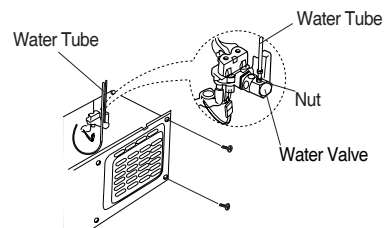
Achtung   Set the tube upright as the figure shows.

6. Fasten the Water Tube.

1) Fasten the Water Tube with the [Fastener A] .

2) Check if the tube is bent or sqeezed. If so, set it right to prevent any water leak.
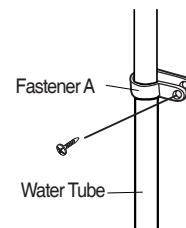
7. After installation of Water Supply System

1) Plug the refrigerator, press the [WATER] button on the control panel for 2~3 minutes to remove any air (bubble) in the pipes and drain out the initial water.

2) Check the water leak again through the water supply system (tubes, connectors and pipes) Rearrange the tubes again and do not move the refrigerator.
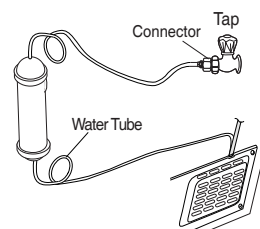
● Replacing Freezer Door

1 Insert the water tube into the hole of the bottom hinge pin first, then Insert the bottom of freezer door into the bottom hinge pin.
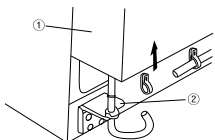
2 Insert the bottom hole of freezer door straight to the bottom hinge pin.
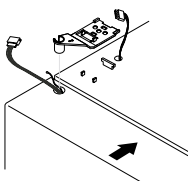
3 Let the top of door close to the cabinet and insert the top hinge pin to the top hole of freezer door. (Insert the back of hinge to the groove of protrusion first, then front to the top hole of door.)
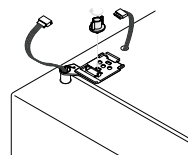
4 Turn the hinge fastener tightly to the end. Connect harness wirings and screw ground wire.
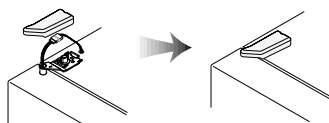
5 Insert the water tube far into the coupling.

● Replacing Refrigerator Door

1 Insert the bottom hole of refrigerator door straight to the bottom hinge pin
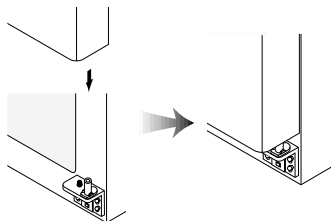
2 Let the top of door close to the cabinet and insert the top hinge pin to the top hole of freezer door (Insert the back of hinge to the groove of protrusion first, then front to the top hole of door.)
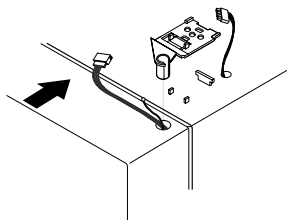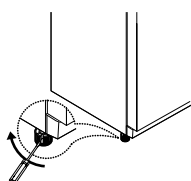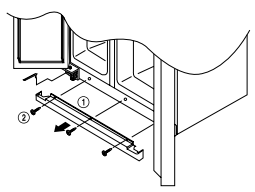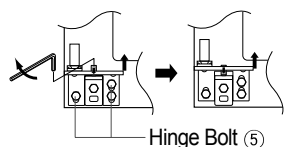
3 Turn the hinge fastener tightly to the end. Connect harness wirings and screw ground wire. Click and screw the top hinge cover.
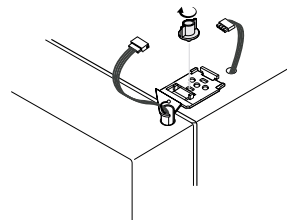
3. Refrigerator Leveling & Door Adjustment(If needed.)

Refrigerator must be level in order to maintain optimal performance and desirable front appearance.
(If the floor beneath the refrigerator is uneven, freezer and refrigerator doors look unbalanced.)

● In case freezer door is lower than refrigerator door   ...● · · · · · · · · · ·
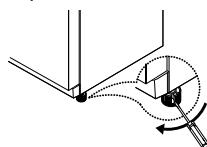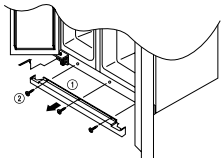
1 Insert a screw driver (flat tip) into a groove of the left wheel (bottom of freezer) and turn it clockwise until the door is balanced. (clockwise to raise freezer door ; counterclockwise to lower)
※Unless the freezer door is balanced by step 1, then follow the next steps.

2 Open the doors, unscrew the front cover and remove, if it is attached.

3 Loosen 3 hinge bolts(1 on the left + 2 on the right) a little. (Do not unfasten them completely.) Insert a hexagonal wrench into the groove of adjusting nut and turn clockwise until the door is level.

4 Once the door is balanced, fasten the hinge bolts tightly and screw the front cover.

Hinge Bolt ⑤

Caution • The front of refrigerator needs to be higher just a little than the back for easy door closing, but if the wheel is raised too much for door balance, i.e. front of refrigerator is too higher than the back, it can be difficult to open the door.

● In case refrigerator door is lower than freezer door   ...● · · · · · · · · · ·

1 Insert a screw driver (flat tip) into a groove of the right wheel (bottom of refrigerator) and turn it clockwise until the door is balanced. (clockwise to raise refrigerator door ; counterclockwise to lower)

※Unless the refrigerator door is balanced by step 1, then follow the next steps.

2 Loosen 3 hinge bolts(2 on the left + 1 on the right) a little. (Do not unfasten them completely.)
Insert a hexagonal wrench into the groove of adjusting nut and turn clockwise until the door is level.

3 Once the door is balanced, fasten the hinge bolts tightly.

Front Cover

After installation and/or door leveling, fasten front cover with screws.(Remove the screws on the front bottom panel first. Click and screw the cover)

Attaching of Water Filter Holder

Remove the back paper of the tape on the filter holder and attach the filter holder on a suitable place.

Exploded View & Parts List

Model
FRT-551D~/FRS-T20DA*
FRT-551F~/FRS-T20FA*
FRT-581B~/FRS-T20BA*
FRT-581H~/FRS-T20HA*
FRT-661D~/FRS-T24DA*
FRT-661F~/FRS-T24FA*
FRT-691B~/FRS-T24BA*
FRT-691H~/FRS-T24HA*
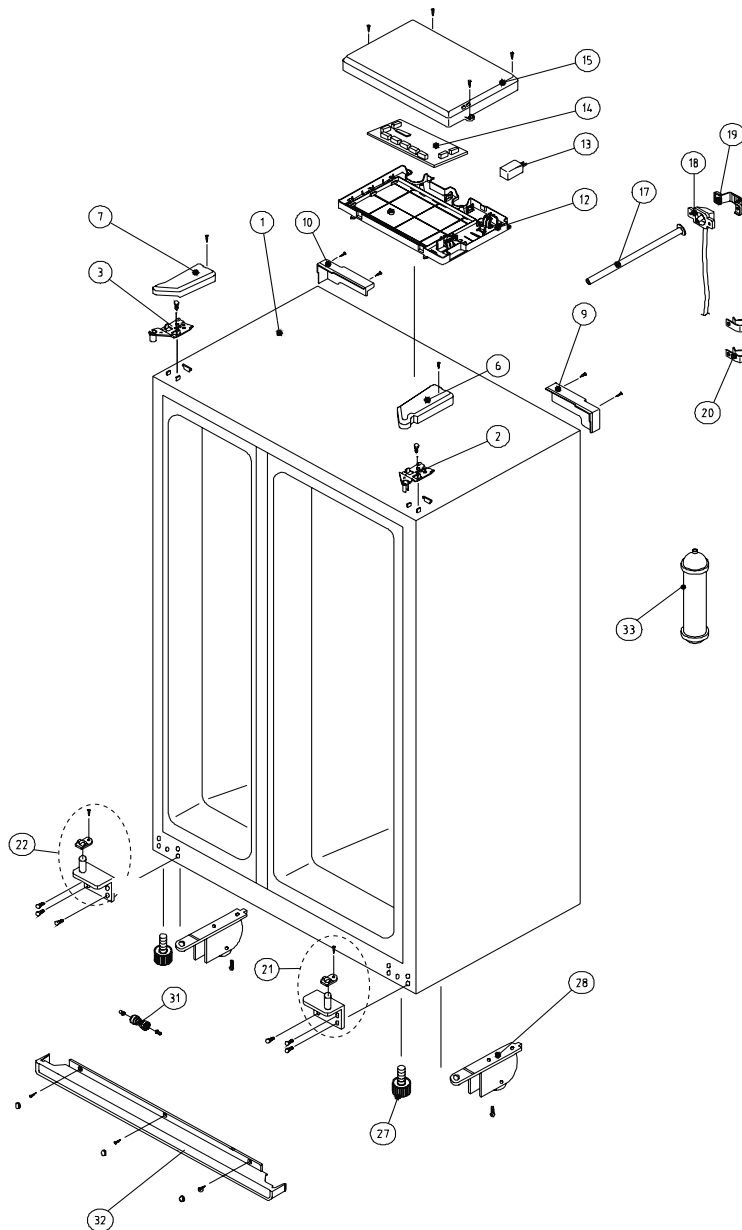
NO	PART-CODE	PART NAME	SPEC.	Q'ty			
				20BA*	20HA*	20DA*	20FA*
				24BA*	24HA*	24DA*	24FA*
1		ASSY CAB URT					
2	3012908100	HINGE *T *R AS	FR-T690DG	1	1	1	1
3	3012907400	HINGE *T *L AS	FR-T690DG	1	1	1	1
6	3011472400	COVER HI *T *R	PP	1	1	1	1
7	3011472300	COVER HI *T *L	PP	1	1	1	1
9	3012601302	HANDLE CAB COVR *R	PP(CAVITY 1*4*2)	1	1	1	1
10	3012601202	HANDLE CAB COVR *L	PP(CAVITY 1*4*2)	1	1	1	1
12	3010533400	BOX M/PCB	PP(FB-72)	1	1	1	1
13	3016401170	CAPACITOR RUN	350VAC 5UF(EUROPEAN)	1	1	1	1
	3016401610		250VAC/12UF EPOXY WIRE				
	3016401920		400VAC 5UF(WIRE)				
	400EL15130		230V-10UF				
14	30143B4024	PCB MAIN AS	FR-S580CG (ISO)	1	1	x	x
	30143C4041		FR-T660DD(SAA)	x	x	1	1
	30143C4050		FR-T660DD(MEXICO)				
15	3011472610	COVER M/PCB BOX	PP(V-235)	1	1	1	1
17	3013223401	HOSE I/MAKER TUBE AS	220~240V	x	x	1	1
	3013223420		110~127V				
18	3012519200	GUIDE CAB W/TUBE A AS	FR-S660CW			1	1
19	3011485600	COVER GUIDE CAB W/TUBE A	HIPS	x	x	1	1
20	3011202000	CLAMP TUBE	PA-66,5N			2	2
21	3012907304	HINGE *U *R AS	PO T5 BK PAINT	1	1	2	2
22	3012907203	HINGE *U *L AS	PO T5 BK PAINT	1	1	1	1
27	3012104410	FOOT ADJ AS	FR-T690FGS	2	2	2	2
28	3010654510	BRACKET ADJ FOOT AS	SPCC T2.6	2	2	2	2
31	3013064200	HOLDER TUBE A	A5UC5	x	x	1	1
32	3011494010	COVER CAB BRKT AS	COVER+CAP	1	1	1	1
33	3019974020	S/PART W/TUBE AS	EXPORT MODEL(POM)	x	x	1	1

- Some parts can be chaged for improving their perfomance without notice.

- Above parts number doesn't describe your own colour & printing. Please remind!

Date	**A** mendment Note

1
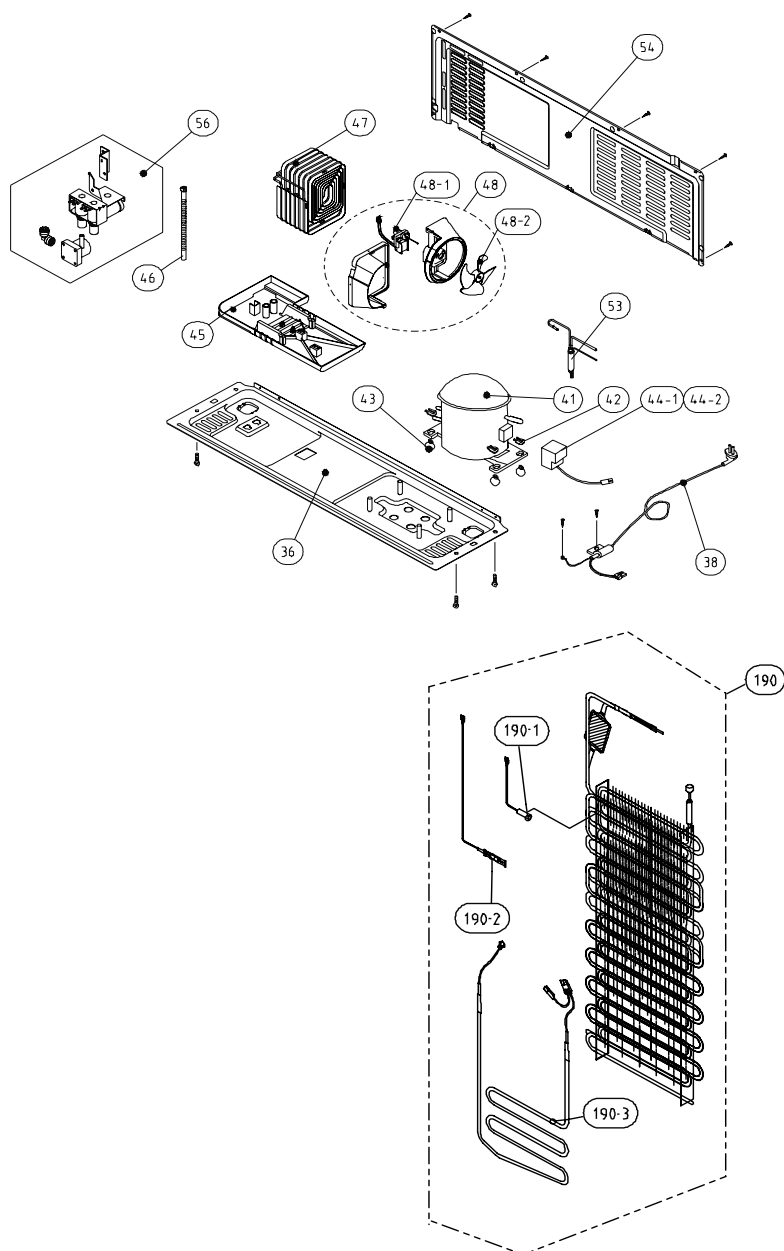
NO	PART-CODE	PART NAME	SPEC.	20BA* 24BA*	20HA* 24HA*	20DA* 24DA*	20FA* 24FA*
						Q'ty	
36	3010326702	BASE COMP AS	FR-S690FRI(VE)	1	1	1	1
38	7 page	CORD POWER AS		1	1	1	1
41	3956190F50	COMPRESSOR	DH90LHP5 220V-240V 50HZ	1	1	1	1
	3952127R30		HBL27YG-3 110V 60HZ				
	3957127R20		HCL27YG-2 127V 60HZ				
	3956127R40		HPL27YG-4-N 220V 60HZ				
	395S130R50		HPL30YG-5-N 220/240V 50HZ				
	3956183D10		MK183C-L2U 110-115V-60HZ				
	3956183D50		MK183Q-L2U 220-240V-50HZ				
42	3016002500	SPECIAL WASHER	SK-5 T0.8	3	3	3	3
43	3010101600	ABSORBER COMP	NBR	4	4	4	4
44-1	7page	SWITCH P RELAY AS		1	1	1	1
44-2	3811400503	COVER RELAY	DAEWOO COMPRESSOR	1	1	1	1
	3811402100		SAMSUNG COMPRESSOR				
45	3011181310	CASE VAPORI AS	FRS-551F PP(NATURAL)	1	1	1	1
46	3013201710	HOSE DRN B	PE FRB-5970NB	1	1	1	1
47	3014461530	PIPE WICON AS	TSW OD4.76XT0.7	1	1	1	1
48	3018500410	M/BELL AS	FRS-551F PP(NATURAL)	1	1	1	1
48-1	3015914100	MOTOR C FAN	DC-2213DWCA-3	1	1	1	1
48-2	3011834710	FAN	PP OD3.17XD150	1	1	1	1
53	3016808100	DRYER AS	C1220T-M OD19.05XL135	1	1	1	1
54	3011474750	COVER MACH RM AS	FRS-551F(F-US(N))	1	1	1	1
56	3015402300	VALVE WATER AS	220~240V	x	x	1	1
	3015402310		110~127V				

190	3017050730	EVA AS	ACCUM SHEATH HEATER 220~240V/250W	1	1	1	1
	3017050740		ACCUM SHEATH HEATER 110~127V/250W				
190-1	3014805200	SENSOR D AS	PBN-43	1	1	1	1
190-2	3017202000	FUSE TEMP AS	AC 250V 77C 10A	1	1	1	1
190-3	3012818100	HEATER SHEATH AS	220~240V/250W	1	1	1	1
	3012818200		110~127V/250W				

- Some parts can be chaged for improving their perfomance without notice.
- Above parts number doesn't describe your own colour & printing. Please remind!
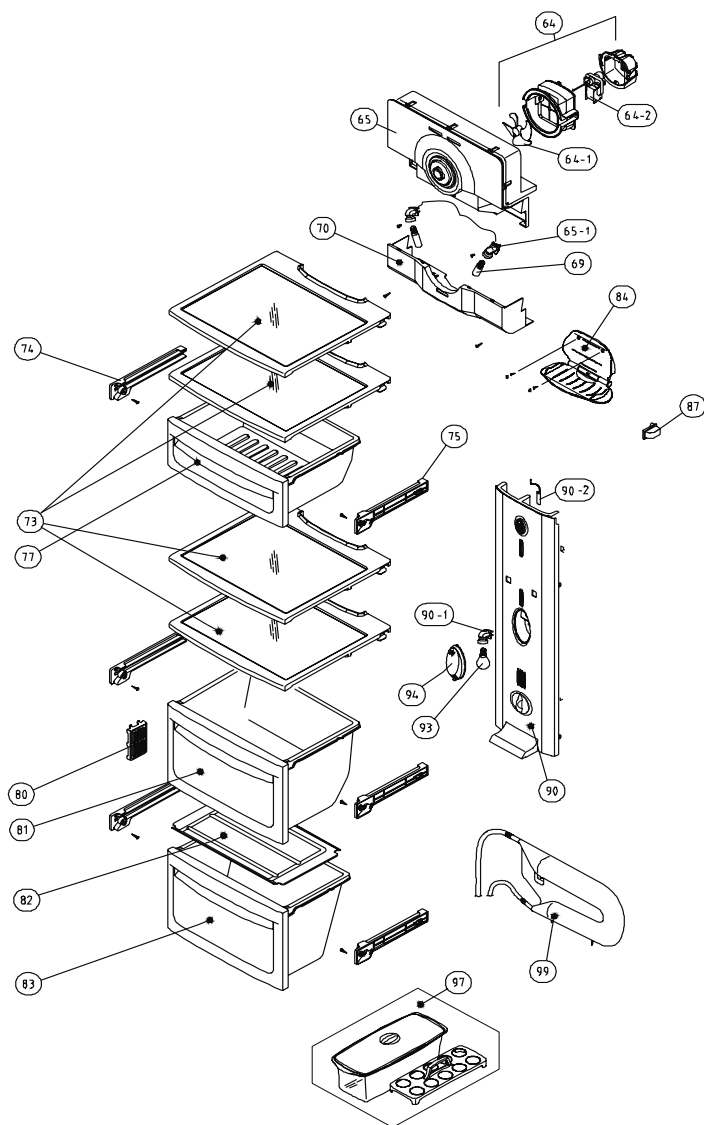
Date	*A* mendment Note

NO	PART-CODE	PART NAME	SPEC.	Q'ty			
				20BA*	20DA*	24BA*	24DA*
				20HA*	20FA*	24HA*	24FA*
64	3015911600	MOTOR R FAN	FR-S580CG	1	1	1	1
64-1	3011802200	FAN	ABS OD3.17XD110	1	1	1	1
64-2	3015911400	MOTOR R FAN	BL-2213DWRA-1	1	1	1	1
65	3013345201	INSU DAMP AS	FR-S580EG	1	1	1	1
65-1	3017905300	SOCKET R LAMP AS	250V/1A	1	1	1	1
69	3013602500	LAMP F/R	AC 240V 25W(S)	1	1	1	1
	3013602800		AC 125V 25W				
70	3015507900	WINDOW R LAMP A	MIPS	1	1	1	1
73	3017827460	SHELF INMOLDING R AS	FRAME+PRINTED GLASS	4	4	x	x
73	3017831040	SHELF INMOLDING R AS	FRAME+PRINTED GLASS	x	x	4	4
74	3012514512	GUIDE CASE A *L AS	FR-S580EG(PP)	3	3	3	3
75	3012514612	GUIDE CASE A *R AS	FR-S580EG(PP)	3	3	3	3
77	3011171280	CASE CHILD AS	NO NANO, 55/58 MODEL	1	1	x	x
	3011171290		NANO, 55/58 MODEL				
	3011177760		NANO, 66/69 MODEL	x	x	1	1
	3011177770		NO NANO, 66/69 MODEL				
80	3011472900	COVER RETURN DUCT	PP	1	1	1	1
81	3011172020	CASE VEGETB A AS	NANO, 55/58 MODEL	1	1	x	x
	3011172040		NO NANO, 55/58 MODEL				
	3011178220		NANO, 66/69 MODEL	x	x	1	1
	3011178260		NO NANO, 66/69 MODEL				
82	3011473200	COVER V/CASE B	GPPS, 55/58 MODEL	1	1	x	x
	3011485400		GPPS, 66/69 MODEL	x	x	1	1
83	3011172160	CASE VEGETB B AS	NANO, 55/58 MODEL	1	1	x	x
	3011172170		NO NANO, 55/58 MODEL				
	3011178320		NANO, 66/69 MODEL	x	x	1	1
	3011178360		NO NANO, 66/69 MODEL				
84	3017827570	SHELF WINE AS	FR-S580CG	1	1	1	1
87	3018124000	SWITCH LAMP *R	SP201R-7DR	1	1	1	1
90	3011474820	COVER M/F DUCT AS	FRS-581 SILK	1	1	1	1
90-1	3017905310	SOCKET R LAMP AS	250V 1A	1	1	1	1
90-2	3014805400	SENSOR R AS	PBN-43B	1	1	1	1
93	3013600020	LAMP AS	240V/15W	1	1	1	1
	3013600050		120V/15W				
94	3015508000	WINDOW R LAMP B	MIPS	1	1	1	1
97	3011171300	CASE EGG	CASE+COVER+TRAY+GUIDE	1	1	1	1
99	3018200812	TANK WATER AS	FRS-551F	x	1	x	x
	3018200802		FR-S660CW		x		1

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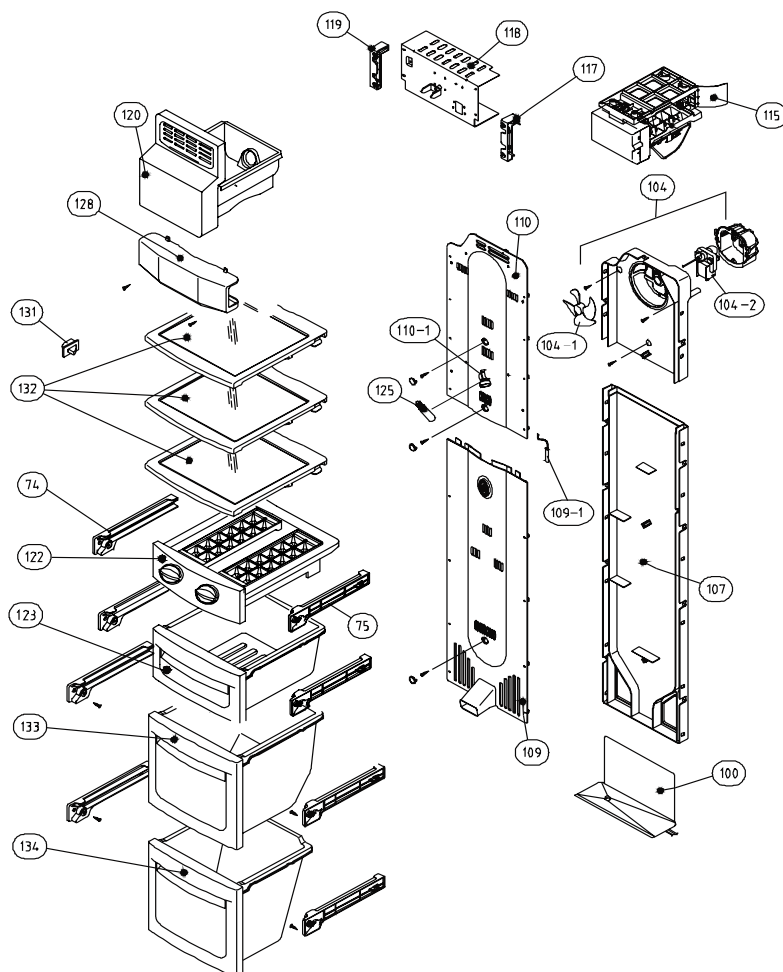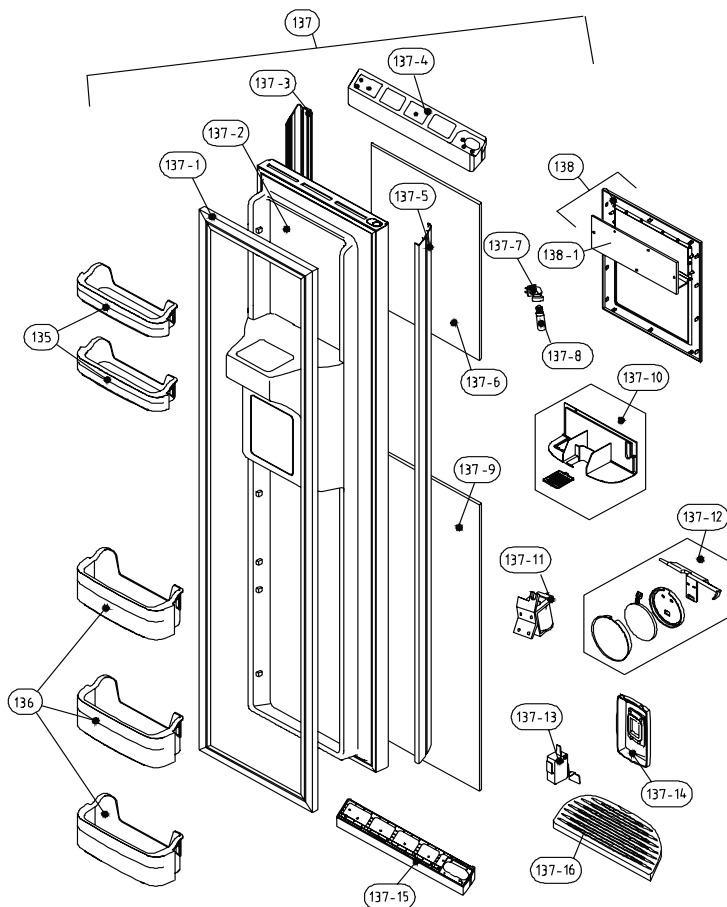*- Above parts number doesn't describe your own colour & printing. Please remind!*

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NO	PART-CODE	PART NAME	SPEC.	20BA* 20HA*	20DA* 20FA*	24BA* 24HA*	24DA* 24FA*
74	3012514512	GUIDE CASE A *L AS	FR-S580EG(PP)	4	2	4	2
75	3012514612	GUIDE CASE A *R AS	FR-S580EG(PP)	4	2	4	2
100	3012514210	GUIDE DRN	EGI CABINET SCRAP(T0.5)	1	1	1	1
104	3018914810	LOUVER F C AS	FR-S690CG	1	1	1	1
104-1	3011834500	FAN	ABS OD130	1	1	1	1
104-2	3015911310	MOTOR F FAN	DL-2213DWFA-2	1	1	1	1
107	3018914900	LOUVER F D AS	FR-S580CG	1	1	1	1
109	3018914700	LOUVER F B AS	FR-S580CG	1	1	1	1
109-1	3014805300	SENSOR F AS	PT-38	1	1	1	1
110	3018914630	LOUVER F A AS	FR-S660CW/CD	x	1	x	1
110	3018914650	LOUVER F A AS	FRS-581B	1	x	1	x
110-1	3017905220	SOCKET F LAMP AS	FR-S580EG(250V 0.5A)	1	1	1	1
115	3000025900	CASE I/MAKER AS	FR-S660CW	x	1	x	1
117	3012517900	GUIDE G MOTR BRKT *R	ABS	x	1	x	1
118	3010634880	BRACKET GEARED MOTR AS	110~127V, PLASTIC	x	1	x	1
118	3010634890	BRACKET GEARED MOTR AS	TAIWAN, PLASTIC	x	1	x	1
118	3010634910	BRACKET GEARED MOTR AS	220V/60HZ, PLASTIC	x	1	x	1
118	3010634920	BRACKET GEARED MOTR AS	220~240V/50HZ, PLASTIC	x	1	x	1
119	3012517800	GUIDE G MOTR BRKT *L	ABS	x	1	x	1
120	3011176251	CASE I/CRUSHER AS	SBS 55 MODEL	x	1	x	x
120	3011176202	CASE I/CRUSHER AS	SBS 66 MODEL	x	x	x	1
122	3012204240	FRAME I/MAKER AS	FRS-582 SILK	1	x	x	x
122	3012205730	FRAME I/MAKER AS	FRS-691 SILK	x	x	1	x
123	3011171870	CASE ICE AS	NANO, 55/58 MODEL	1	x	x	x
123	3011171880	CASE ICE AS	NO NANO, 55/58 MODEL	1	x	x	x
123	3011178060	CASE ICE AS	NANO, 66/69 MODEL	x	x	1	x
123	3011178070	CASE ICE AS	NO NANO, 66/69 MODEL	x	x	1	x
125	3013602500	LAMP F/R	AC 240V 25W(S)	1	1	1	1
125	3013602800	LAMP F/R	AC 125V 25W	1	1	1	1
128	3015507710	WINDOW F LAMP	MIPS	1	1	1	1
131	3018124010	SWITCH LAMP *L	SP201R-7DL	1	1	1	1
132	3017827120	SHELF F A AS	FRAME+SHELF+FIXTURE	3	3	x	x
132	3017831800	SHELF F AS	FRAME+SHELF+FIXTURE	x	x	3	3
133	3011171460	CASE F A AS	NANO, 55/58 MODEL	1	1	x	x
133	3011171440	CASE F A AS	NO NANO, 55/58 MODEL	1	1	x	x
133	3011177820	CASE F A AS	NANO, 66/69 MODEL	x	x	1	1
133	3011177870	CASE F A AS	NO NANO, 66/69 MODEL	x	x	1	1
134	3011171530	CASE F B AS	NANO, 55/58 MODEL	1	1	x	x
134	3011171540	CASE F B AS	NO NANO, 55/58 MODEL	1	1	x	x
134	3011177920	CASE F B AS	NANO, 66/69 MODEL	x	x	1	1
134	3011177970	CASE F B AS	NO NANO, 66/69 MODEL	x	x	1	1

※ *Features are model dependent*
Dispenser model illustrated

NO	PART-CODE	PART NAME	SPEC.	Q'ty			
				20BA*	20HA*	20DA*	20FA*
				24BA*	24HA*	24DA*	24FA*
135	3019019030	POCKET F *S	HIPS+SILK	1	1	2	2
136	3019019150	POCKET F	HIPS+SILK	5	5	3	3
137	3000054300	ASSY F DR	LMH4G, 55MODEL	x	x	1	x
	3000054310		BSH4G, BNH4G, 55MODEL	x	x	1	x
	3000039600		BSH4G, BNH4G, 58MODEL	1	1	x	x
	3000039620		LMH4G, 58MODEL	1	1	x	x
	3000039700		BSH4G, BNH4G, 66MODEL	x	x	x	1
	3000039720		LMH4G, 66MODEL	x	x	x	1
137-1	3012314220	GASKET F DR AS	PVC	1	1	1	1
137-2	3011754100	DOOR F URT AS	FR-T660DD	x	x	1	1
	3011754110	DOOR F URT AS	FR-T690DG	1	1	x	x
137-3	3012604500	HANDLE INTR DR AS	FR-T690DG	1	1	1	1
137-4	3010930300	CAP F INTR DR *T	ABS+SPRAY	1	1	1	1
137-5	3012201500	FRAME F DR *O	AL T1.5	1	1	1	1
137-6	3014206300	PANEL F DR *T	BSH4G, BNH4G	1	1	1	1
	3014206320	PANEL F DR *T	LMH4G	1	1	1	1
137-7	3017903702	SOCKET LAMP AS	250V 1A	x	x	1	1
137-8	3013600020	LAMP AS	240V/15W	x	x	1	1
	3013600050		120V/15W	x	x	1	1
137-9	3014206600	PANEL F DR *U	BSH4G, BNH4G, DISPENSER	x	x	1	1
	3014206620		LMH4G, DISPENSER	x	x	1	1
	3014206400		BSH4G, BNH4G, BASIC	1	1	x	x
	3014206420		LMH4G, BASIC	1	1	x	x
137-10	3010542200	BOX DISPNS I/SHUT AS	.	x	x	1	1
137-11	3015402100	VALVE SOL DISPNS	220V/60HZ	x	x	1	1
	3015403000		220~240V/50HZ	x	x	1	1
	3015403120		110~127V/60HZ	x	x	1	1
	3015403200		110~115V/60HZ	x	x	1	1
137-12	3011485900	COVER I/FLAP AS	FR-S660CW	x	x	1	1
137-13	3018125800	SWITCH MICRO	VP333A-2D	x	x	1	1
137-14	3016304000	BUTTON DISPNS AS	FR-T660DD	x	x	1	1
137-15	3010964300	CAP F INTR DR *U AS	FR-T690DG	1	1	1	1
137-16	3012406200	GRILLE DISPNS	ABS	x	x	1	1
138	3011490200	COVER DISPNS BOX AS	BSH4G, BNH4G	x	X	1	1
	3011490210		LMH4G	x	X	1	1
	3011488320	COVER F PCB AS	BSH4G, BNH4G	1	1	x	x
	3011488330		LMH4G	1	1	x	x
138-1	30143C4110	PCB FRONT AS	FR-T66CDD	x	x	1	1
	30143C2130	PCB FRONT AS	FR-T69CDG	1	1	x	x

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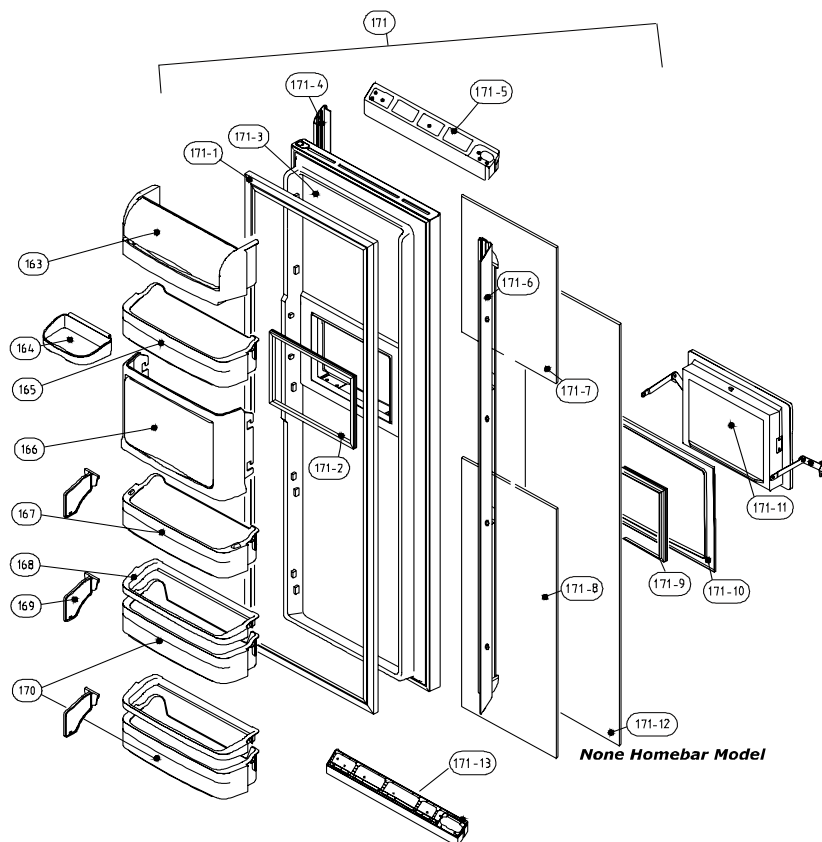
※ **Features are model dependent**
   Homebar model illustrated

None Homebar Model

NO	PART-CODE	PART NAME	SPEC.	Q'ty			
				20BA*	20HA*	20DA*	20FA*
				24BA*	24HA*	24DA*	24FA*
163	3019019400	POCKET DAIRY AS	POCKET+COVER	1	1	1	1
164	3019019300	POCKET R *S	GP	1	1	1	1
165	3019019830	POCKET R *M	HIPS SILK	2	1	2	1
166	3011474600	COVER H/BAR AS	FR-S580CR	x	1	x	1
167	3019022130	POCKET R H/BAR	HIPS SILK	x	1	x	1
168	3012514100	GUIDE R POKT	HIPS	2	2	2	2
169	3012513400	GUIDE BOTL	PP	3	3	3	3
170	3019019230	POCKET R	HIPS+SILK	2	2	2	2
171	3000039500	ASSY R DR	BSH4G, BNH4G	1	x	1	x
	3000039520		LMH4G				
	3000039400		BSH4G, BNH4G, H/BAR	x	1	x	1
	3000039420		LMH4G, H/BAR				
171-1	3012314520	GASKET R DR AS	PVC	1	1	1	1
171-2	3012314400	GASKET H/BAR B AS	PVC	x	1	x	1
171-3	3011754200	DOOR R URT AS	FR-T690DG	1	x	1	x
	3011754210	DOOR R URT AS	FR-T690DR	x	1	x	1
171-4	3012201800	FRAME R DR *O	AL T1.5	1	1	1	1
171-5	3010930500	CAP R INTR DR *T	ABS+SPRAY	1	1	1	1
171-6	3012604500	HANDLE INTR DR AS	FR-T690DG	1	1	1	1
171-7	3014206900	PANEL R DR *T	BSH4G, BNH4G, H/BAR	x	1	x	1
	3014206920		LMH4G, H/BAR				
171-8	3014207000	PANEL R DR *U	BSH4G, BNH4G, H/BAR	x	1	x	1
	3014207020		LMH4G, H/BAR				
171-9	3012314310	GASKET H/BAR A AS	PVC	x	1	x	1
171-10	3011437100	COVER H/BAR FRAME	ABS+SPRAY	x	1	x	1
171-11	3011756500	DOOR H/BAR AS	FR-T690DR	x	1	x	1
171-12	3014206500	PANEL R DR	BSH4G, BNH4G	1	x	1	x
	3014206520		LMH4G				
171-13	3010964400	CAP R INTR DR *U AS	FR-T690DG	1	1	1	1

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Date	**A** mendment Note

1. Electric Device

Compressor		Capacitor Run		Capacitor Start		Switch P Relay AS		Remark
Specification	Part Code	Specification	Part Code	Part code	Specification	Specification	Part Code	
HPL30YG-5	395S130R50	400VAC/5μF	3016401920			308NHB, S330	3018129810	220~240V/50Hz
DH90LHP5	3956190F50	400VAC/5μF	3016401920			265RHB, S330	3018119470	220~240V/50Hz
MK183Q-L2U	3956183D50	350VAC/5μF	3016401170		x	265RHB, S330	3018129600	220~240V/50Hz
HPL27YG-4-N	3956127R40	350VAC/ 5μF	3016401170			419RHB, S330	3018118131	220V/60Hz
MK183C-L2U	3956183D10	250VAC/12μF	3016405000			445PHB, 4R7M	3018129610	110~127V/60Hz
HBL27YG-3	3952127R30	230VAC/10μF	400EL15130	200VAC/100μF	3016400100	783SHB, S068	3018119370	110V/60Hz
HCL27YG-2	3957127R20	x		200VAC/100μF	3016400100	783SHB, S068	3018118170	127V/60Hz

2. Power Cord

Shape	Description	Part Code	Shape	Description	Part Code
	CP-2PIN	3011304100		KP-550 (China)	3011301030
	CP-2PIN(Ferrite)	3011344221		KP-550 (Australia)	3011301060
	KP-30 (MEXICO)	3011301741		ISRAEL (Ferrite)	3011301260
	SA16A (South Africa)	3011302160		BS-1363 (U.K)	3011344231